PRESENTED BY
DR. A. S. WARTHIN.

See Program, Southwestern Meeting, Albuquerque, Nov. 8th to 10th

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Volume XII. OCTOBER, 1928 No. 10

OFFICIAL ORGAN
OF THE
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ARIZONA STATE MEDICAL ASSOCIATION
EL PASO COUNTY (TEXAS) MEDICAL SOCIETY
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PUBLIC HEALTH MEASURES IN POLIOMYELITIS

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(Read at the Thirty-seventh Annual Meeting of the Arizona State Medical Association, Tucson, April 20, 1928.)

Public health measures concerned with poliomyelitis may be separated into two major groups: (1) efforts to prevent spread of infection, and (2) salvage operations. The first are conceded to be a duty of the state; the second seem to be as clearly a duty, for both humanitarian and economic reasons, in so far, at least, as we have to deal with those who cannot, or will not, help themselves.

CONTROLLING INFECTION

What can be done to curtail the spread of infection? In all candor it must be admitted that our present control measures are based largely upon theoretical grounds; we do not have satisfactory proof that they are even partially effective. Let us keep that fact in mind, lest we be tempted to dogmatize too confidently.

First in order of importance, is early and widespread publicity, whenever an outbreak of poliomyelitis appears to be gathering momentum. A slight increase above the usual prevalence, especially following a decline of two or three years duration, should warn a health officer to be on the alert. When the number of cases has risen steadily during three consecutive weeks, he is justified in giving the facts to the public without further delay. To wait until an outbreak has become fully established, until the seriousness of the situation is obvious to everyone, before taking decisive action, is to waste time of critical value. It cheats prevention of its only chance to succeed. This first public announcement should include a simple outline of what is known and assumed, such as the source of the disease, its probable mode of transmission, possible means of escaping infection, early symptoms, and proper care of the patient during the acute stage to prevent needless deformity. Parents must be urged to keep their children at home. And, above all, they should be warned that a very general carrier condition develops among both adults and children, and that the adult, whose range of movement is wider than the child's, is probably the greater menace of the two. Finally, the press ought to be given daily reports on the number and location of new cases and of deaths.

This procedure is destined to encounter opposition in some quarters. There are selfish interests, often of the greatest influence, that are responsibe chiefly to financial considerations. The health officer must have courage to combat them. In so doing he will be heartened by countless others, chief among them the parents of young children, who will rise up to call him blessed for his frankness. There is no doubt that such a course strengthens public confidence, both within the affected community and outside of it. The public will feel that a health department dealing thus honestly with it can be trusted in emergencies. Hysteria yields place to common sense.

As a part of this educational program, every physician who is likely to see these cases should be offered special information. Because this disease is so rarely encountered between epidemic years, it is advisable to refresh the physicians' memories on differential diagnosis, emphasizing early symptoms, and to remind them how urgent it is that prolonged support be given paralyzed extremities, and that all active local treatment be avoided until the acute stage is well passed. They can also be asked to cooperate in the control measures inaugurated by the health department. In a relatively small area, such as a county or city, the doctors may very profitably be brought together for a conference.

Since we are fairly certain that the virus of poliomyelitis is present in mouth, nasopharynx and bowel, there are definite things that may be done to cut the lines of communication between patient and outside world.

(1) Doctors, parents, teachers and others who have information, must report cases at once, whether fully diagnosed or only suspected. Of the two, the suspected case is probably of greater importance, as the patient will almost certainly be visited by his friends who "did not know it was infantile paralysis," or he may be going about with only some vague discomfort.

(2) A placard should be posted on the home of a case or of a suspected case, forbidding any unauthorized person to enter or leave.

(3) The patient must be isolated, in a separate room if possible. Isolation should continue for a minimum period of three weeks. This is probably not long enough in some instances. At least one experimental monkey retained active virus in its nasopharynx for five and one-half months after an acute attack[4]. But most studies indicate that the virus disappears rapidly.

(4) Windows and doors should be screened against flies.

(5) All articles soiled by the patient, as well as his feces and urine, must be sterilized by suitable methods.

(6) Terminal disinfection needs to be thorough, since it appears that the virus resists drying for some time. It is, however, killed by relatively weak antiseptics[3].

Transmission of infection seems to be accomplished chiefly by contact with cases or carriers. There is rather convincing evidence that a fairly widespread carrier state develops during an epidemic. Mild or abortive cases are also a constant danger. It is, therefore, justifiable to maintain exceptionally rigorous control of contacts.

(1) The person who nurses an acute case should be confined as closely as possible with the patient. He must observe extraordinary care in cleansing his hands and in disinfecting his garments soiled by the patient.

(2) Other contacts, in the family or outside, should be quarantined for at least two, and preferably three, weeks. This applies in particular to those whose occupations bring them into frequent association with children. A careful search must be made by the health department to discover all persons who have been exposed.

Several measures of a general nature are warranted by our present knowledge of the disease, in addition to the giving of full publicity already mentioned.

(1) Since, as a rule, ninety-five per cent of cases occur in children ten years old or under, public gatherings of all kinds should be closed to them. It is safer to fix the age limit at twleve years.

(2) Should the schools be closed? The answer depends upon the available quality and quantity of health supervision. In a remote rural school, without public health nursing service and under a part-time health officer, it would be best to close school, providing the children do not have opportunities to congregate elsewhere. This latter point would be determined by the concentration of population and habits of travel. On the other hand, if a reasonably adequate medical and nursing staff can be provided, it is better to keep schools open.

(a) Every teacher should be instructed to watch for any signs of slight illness, or even listlessness, among her pupils, and to send such children directly home. She should then report immediately to the school physician or nurse, or to the health officer.

(b) Daily inspection of all school children should be made by physician or nurse and any suspects excluded at once.

(c) Suspects who are sent home, and all other absentees, should be visited by the nurse. If these children appear to be sick, the parents ought to be told to keep them home for at least three days' observation. A physician or nurse should see them daily.

(d) Reports of these excluded children should be made to the health officer by the school authorities, if he is not in charge of school inspections. He is then in position to enforce the three-day observation period and make prompt diagnoses.

(3) Other public gatherings of children might possibly be permitted under exactly similar conditions, provided the medical and nursing personnel were selected and controlled entirely by the health officer.

(4) During an outbreak, special attention should be given to enforcing laws forbidding the use of common drinking cups and those requiring sterilization of eating and drinking utensils used in public places. Incidentally, many so-called "sanitary" drinking fountains are sanitary illusions.

(5) While milk is not a usual vehicle of infection, it has been given credit for three outbreaks[3]. The health officer should see that dairymen report to him, at once, illness of any nature occurring among those who handle the milk or utensils.

(6) A vaccine has been produced and tried experimentally on monkeys, but little is claimed for it as yet[4]. The method of making it is similar to Semple's procedure for antirabic vaccine.

(7) Since weak antiseptics kill the virus, it has been suggested that nose and throat sprays could be used for preventing infection. However, Amos and Taylor[5] showed that the normal nasopharyngeal secretions

neutralize the virus. Spraying would seem to alter secretions and thus remove what little natural protection we have. Our knowledge on this point is so meagre that it is advisable to oppose the use of sprays at present.

(8) Various sera have been advocated for mitigating the severity of the acute symptoms or preventing paralysis. The use of these in unskilled hands is fraught with danger and there is no agreement among the authorities as to their actual value. Only with this understanding should they be used.

PREVENTION AND AFTER-CARE OF PARALYSES

At the outset, it was said that a health department is under some obligation to give what aid it can to those who are left with paralyses following poliomyelitis. A detailed discussion of such treatment is out of place here, but general measures may be noted.

(1) The prevention of needless deformity, by the use of proper supports, should be constantly emphasized, because it is so often overlooked. It is really amazing to find how many physicians ignore even the simple precaution of supporting a paralyzed foot, during the acute stage, and thereby permit a drop to develop that need never have occurred.

(2) A health department that has sufficient funds should provide orthopedic consultation for the physicians in its territory, during the outbreak and afterwards.

(3) Much good can be done by the employment of well trained physiotherapy aides. Their services should be made freely available to all patients, under supervision of the attending physicians. These aides will usually have to be imported for service in rural communities.

(4) A few states have provided traveling clinics with a minimum personnel of an orthopedist and one or two physiotherapists.

(5) Permanent clinics are maintained in some of the large cities. It is also gratifying to note that California is planning something of the same sort for groups of rural communities.

(6) Financial aid for many victims will be needed, to provide transportation, hospitalization, surgical care and braces.

NEW MEXICO'S EXPERIENCE IN 1927

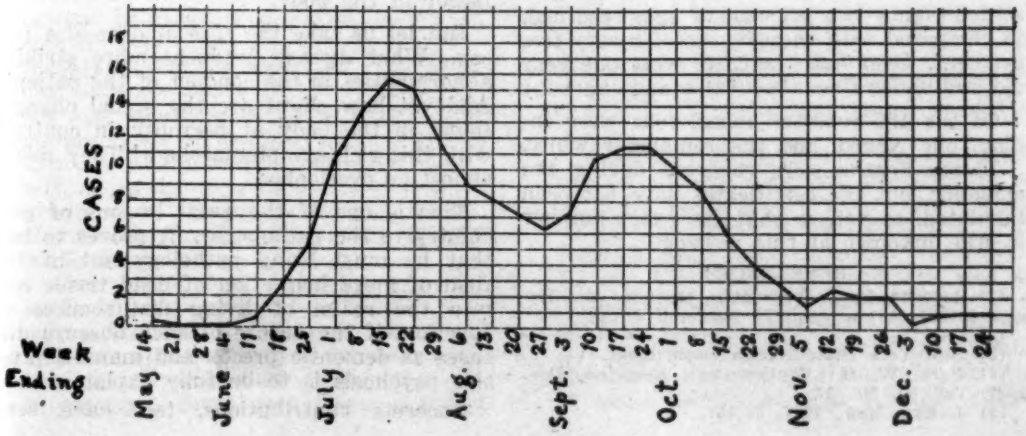
In conclusion, a brief summary of New Mexico's experience with the 1927 outbreak of poliomyelitis may be of inteerst.

From January through June 25th, six cases had been reported. In the week ending July 1, ten cases appeared and, in the next two weeks, eleven and twenty-three respectively. This last was the highest number reported for any one week.

A total of 196 cases were recorded from June 15th until the end of the year. (See chart 1.)

Unlike most of the reported outbreaks, this one appeared in two distinct waves. When the first one had dwindled to three cases, in the week ending September 10th, the Bureau of Health assured the public, prematurely, that danger was over. The next week, eleven cases developed, and nineteen the week following. It was four weeks later that the number began to diminish rapidly. Occasional cases still appear and one death occurred on March 27, 1928.

CHART I.
Poliomyelitis (Acute Ant.)
Weekly Totals of Cases Reported to New Mexico State Bureau of Public Health in 8 Months of 1927, by Date of Onset.
(Moving Average, 3 Weeks)



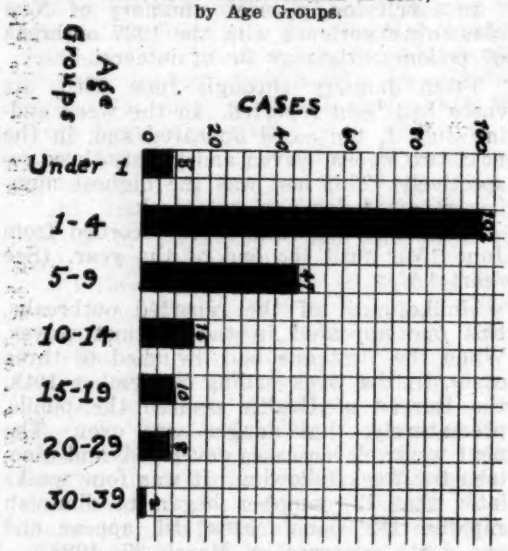
TABLE

Cases of Poliomyelitis (Acute Ant.) Reported to New Mexico State Bureau of Public Health in 1927, by Age and Sex.

	Under 1 yr.	1-4	5-9	10-14	15-19	20-29	30-39	Not Given	Total
Male -	6	50	23	8	6	5			98
Female	2	52	24	7	4	3	2		94
Not Given -								8	8
Totals -	8	102	47	15	10	8	2	8	200

CHART II.

Poliomyelitis (Acute Ant.)
Cases Reported to New Mexico State Bureau of Public Health in 1927, by Age Groups.



A striking feautre of this epidemic was the concentration of cases in the eastern half of the State. Only twelve per cent were reported from the western half.

Age distribution of patients was somewhat unusual. Those under ten years represented eighty-two per cent of ages recorded, as compared with the average of ninety-five per cent. Over half the cases were one year old and under five. (See Table and chart 2.)

Of the 196 reported cases, four were Indian, one Negro, and the remainder white.

Thirty deaths were reported during the epidemic, but the certificates have not been tabulated, as yet, so that the exact number is still unknown at this writing.

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THE CONTRIBUTION OF PSYCHIATRY TO MEDICINE

CHARLES W. THOMPSON, M. D., F. A. C. P.
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Read before the New Mexico Medical Society, at its forty-sixth Annual Meeting, Albuquerque, N. M., May 10 to 12, 1928.

It is now generally admitted that there should be a closer association between psychiatry and general medicine than has heretofore been the case. Psychiatrists have long conceded that it is impossible to do justice to the study of a mental case without first subjecting the patient to a complete examination from the standpoint of the internist, but the fact that the symptoms of diseases ordinarily considered outside the realm of the psychiatrist may be due to, or aggravated by, mental causes, has not been fully recognized.

No longer can psychiatry be considered as the exclusive province of the institutional worker, although the latter is, of course, better fitted by experience to cope with its problems. May[1] believes that psychiatry merits more attention from the general practitioner than it has heretofore received and that it is of great importance to every member of the medical profession. Fortunately, this specialty is now an essential part of the curriculum of the highest types of medical schools and the majority of state boards of medical examiners require a knowledge of it.

The pathology of mental diseases has thrown a new light on our manner of interpreting the significance of anatomic lesions found after death. Accustomed to the gross and rather obvious lesions found in such diseases as tuberculosis or cirrhosis of the liver, for example, the pathologist may be excused for acquiring rather a mechanical turn of mind with regard to the relation between the symptoms and the disturbing factor in the body.

But let us take the case of dementia precox. What disease produces more striking abnormalities in the conduct of the patient? And yet how slight are the actual changes found in the body at necropsy in contrast with this rich symptomatology! They might almost be overlooked.

This is one of the great lessons of psychiatry to the pathologist. It proves to him that he must bring pathology out of the field of mere inspection of dead tissue and into the realm of living disturbances of function, if the nature of such obscure diseases as dementia precox and manic-depressive psychosis is to be fully explained.

Concrete contributions, too, have 'been

made to general pathology as a result of careful study of psychiatric material. Perhaps the most notable example is furnished by the discovery by Noguchi and Moore[4] in 1913 that the spirocheta pallida is actually present in the cerebral cortex of persons suffering from general paresis. Heretofore, the literature dealing with late syphilitic lesions had been encumbered by such words as metasyphilis, referring to a so-called syphilitic diathesis, and parasyphilis, believed to be a late auto-intoxication arising from an earlier syphilitic infection.

The work of Noguchi and Moore led to the general conception that late syphilis, wherever located, is really due to the presence of the spirochetae pallidae in the lesions. This was a real contribution to general pathology.

Psychiatry deals with personality, a subject which has hitherto been greatly neglected in general medicine. In fact, it is only within comparatively recent years that the importance of gaging our treatment according to the mental peculiarities of individual patients has been fully appreciated.

In his evaluation of a given case, the psychiatrist, by habit and training, at once endeavors to ascertain the peculiar personality habits of his patient; for all of us, normal and abnormal alike, have certain dominant mental traits by which we can be roughly classified in one or another personality group.

The psychiatrist may find his patient reticent, unsociable and seclusive; disinclined to associate with his fellow-creatures and unduly shy in accepting introductions, particularly to persons of the opposite sex; disinterested in ordinary sports, games and recreations but fond of loneliness and day dreaming. This is the shut-in personality—a tendency to live in a world of fancies rather than facts.

This does not necessarily mean that the patient has dementia precox, although the shut-in personality is so characteristic a feature of this psychosis; for psychiatry today deals not only with the existing psychoses but more particularly with the dangerous types of mental habits that lead to them. And the shut-in personality is in itself a pernicious mental habit, or rather group of habits, requiring careful psychotherapeutic handling if eventual disaster is to be prevented.

The patient may be subject to moods, spells of temperamental instability, or periodic alterations of feeling or consciousness. Without apparent cause, he may suddenly become irritable, quarrelsome or even obstreperous. Sometimes these intervals of altered personality culminate in a frank epileptic convulsion; sometimes they do not. But, in either case, the psychiatrist recognizes the undeniable features of the epileptic personality.

These are but two of the many abnormal personality types which the psychiatrist encounters frequently in his studies. There are many more, which need not be described here. But the question that naturally comes to mind is, "How can a knowledge of the personality types help the general physician in his plan of diagnosis and treatment?"

The answer is that symptoms, particularly one's evaluation of them, and even physical expressions of disease, may be influenced more by personality type and psychologic troubles than has hitherto been suspected. Indeed, in some cases, the entire symptom-complex of physical disease is created by troubles that amount to nothing more than the patient's failure to adjust himself mentally to disturbing factors in his environment. When the source of distress or worry is removed, the symptoms promptly disappear.

This aspect of psychiatry teaches the general physician, and particularly the surgeon, not to interpret the symptoms of physical disease too literally; otherwise, there will be much misdirected therapy and many needless operations.

J. Ramsay Hunt[5] states that many disorders which the physician is called upon to treat are purely psychic, while many others result from psychic influences. In the last analysis the burden of all disease of whatever nature is borne by the mind.

Emotional states producing physiologic effects may lead to symptoms which are incorrectly interpreted as bodily defects. Foster[6] cites the case of a woman who suddenly discovered her husband in familiar company with another woman. Naturally the circumstances caused tremendous emotion. Then she began to suffer from cardiac symptoms and believed that she had heart disease. But physical examination was negative and a detailed personal history fully explained the symptoms as of psychologic origin.

Woodyatt[8] states that he has seen a number of patients who were operated on once or twice, sometimes oftener, for symptoms which were really of emotional origin; that these patients were examined carefully, so far as their physical condition was concerned, in some of the leading clinics of the country, but that neuropsychiatric examination was not included in the investigation. He relates the case of a man with an attack of acute abdominal pain strongly suggest-

ing obstruction of the large intestine, who narrowly escaped an unnecessary laparotomy. Repeated fluoroscopy demonstrated that the trouble was due to spasm of the sigmoid. And psychiatric examination into the patient's personal affairs fully explained how his emotional conflicts brought about the temporary spasm of the musculature of the bowel.

There is no sharp division between patients who require a neuropsychiatric examination and those who do not. As Woodyatt aptly puts it, "All men, normal or sick, have emotions and emotional conflicts, and all are affected physically by them."

There is a definite personality type, the invalid personality, for which surgery is directly responsible. Few of us stop to realize what a luxury an operation may be to a person who craves sympathy. Perhaps the husband has become unduly engrossed in his business affairs and consequently unsympathetic. Then, when he is suddenly confronted with the fact that his wife must have an operation, he showers her with every kindness. Flowers, gifts, endearments and daily visits to the hospital follow. These attentions are naturally very gratifying, and the result is that the patient, in her hunger for continued sympathy, unconsciously refuses to relinquish her symptoms. The operation, with all the sympathy that it evoked, has given her an "invalid neurosis."

The mimicry of physical disease by psychoneurotic types extends to all branches of medicine. According to McLester[4], "one-third of the patients who come to the consultant because of digestive complaints, are of the psychoneurotic type." Even in dermatology, the importance of psychopathology has been recognized. Klauder[5] states that "a psychic cause of such common skin diseases as pruritus and urticaria should be included among the many causes of these diseases."

Long-continued treatments alone, especially when they are unnecessary, tend to create psychoneurotic types. Neilson[6] believes that many psychoneurotic patients are made by multiple consultations and "chronic therapy"; that daily or tri-weekly nose and throat treatments extending over months or even years, are bound to have a bad psychologic effect; and that the nervous symptoms, which are frequently attributed to the disease itself, are often the result of failure to understand the natural fears and emotions of the patient incidental to the medical consultation.

A discussion of the contributions of psychiatry to medicine would not be complete without mention of psycho-analysis. While it must be admitted that harm has been done by the work of poorly qualified psycho-analysts and that efforts to extend the Freudian doctrine to all domains of medicine are not legitimate, we cannot gainsay the truth that thorough investigation of the unconscious has done much to enable us to understand the nature of the psychoneuroses and neuroses and has given us a valuable instrument for their treatment.

A psycho-analysis is an elaborate form of treatment. Six months or more may be required for the management of a single case. And any attempt to conduct a psycho-analysis hurriedly or in a slipshod manner is likely to lead to mental disaster for the patient.

It is for this reason that I believe greater advantage should be taken of the method of thoroughly analyzing the **conscious** state. While it is not nearly so difficult or time-consuming, or dangerous to the patient in event of failure, analysis of the conscious state nevertheless yields valuable diagnostic information. And it is also a most useful psychotherapeutic aid, for it is well known that a person who can be made "to talk his troubles and worries out of his system" is greatly benefited thereby.

I believe that psycho-analysis should be reserved for the more severe and refractory cases of frank psychoneuroses and that the average case will respond quite favorably to careful analysis of the conscious state and the mental abreaction which this procedure brings about.

CONCLUSIONS

1. General medicine has profited greatly by the contributions of psychiatry.

2. Psychiatry has given a new point of view to pathology: it has emphasized the need of correlating whatever meager lesions may be found at necropsy with functional changes observed during life.

3. Internist, surgeon and general physician alike, may derive much aid from a knowledge of the personality types of their patients.

4. Thorough study of the psychologic make-up and personal factors in the individual history will avoid much mis-directed therapy and many needless operations.

5. In many neurotic and psychoneurotic conditions thorough analysis of the conscious state proves more practicable and safer than psycho-analysis.

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MANAGEMENT OF SQUINT IN CHILDREN

F. P. SCHUSTER, M. D.
and
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El Paso, Texas.

(Read before the El Paso County Medical Society, El Paso, Texas, May 14, 1928.)

The correction of squint or "cross-eye" in a child, aside from its cosmetic and resultant psychologic aspect, is of prime importance from the standpoint of the conservation of vision. As Priestly Smith said, the advice "to wait and see," frequently given the family when a child begins to squint, too often means waiting and not seeing. Much can be done by early intelligent management of such a case, both in regard to conserving vision and minimizing the cosmetic defect.

The importance of early attention to squint is not appreciated by the laity, nor is it generally impressed upon them by the family physician. Each case must be treated individually, depending on its etiology. When we begin to investigate this phase of the subject we are bewildered by the multitude and elusive factors entering into every case. We come to appreciate that the normal condition of simultaneous use of our eyes involves an intricate, marvelously coordinated, neuromuscular action, details of its varied reflex arcs still being uncertain.

The essential cause of squint lies in the central nervous system but peripheral influences usually precede, throwing the central mechanism out of balance.

For practical purposes, squint may be classified as (1) paralytic; and (2) comitant, or true squint. In comitant squint, in contrast to paralytic, we have, at least at the onset, normal muscle and nerve pathways.

Paralytic squint is generally noted in the first few months of life. It is due to congenital weakness of one or more eye muscles from lesions in the cortex, association centers nuclei, basis cranial, or in the orbit. Occasionally we have congenital absence or anomalous attachment, of a muscle. Paralytic squint, therefore, is normally due to injury or disease.

Comitant squint may develop independently of disease or injury. It may further be subdivided into the convergent type and divergent type. Ordinary convergent strabismus develops between the first and fourth years of age, when accurate attempts at fixation begin. Divergent squint usually develops later in childhood or early youth. There are certain factors which favor the development of comitant squint. One of the most important in children is refractive error. In other words, the eye is not congenitally a perfect camera or optical instrument.

As a concrete example, take a child who has a high degree of hyperopia or astigmatism. The pictures taken by this optical camera are blurred and out of focus. The child attempts to see and frequently does see clearly by over-exerting his accommodation. This automatically results in over, or excessive, convergence, the two actions being closely associated in the same reflex action. The excessive convergence may result in periodic or constant crossing of the eyes.

Another condition favoring the development of true squint, where the refraction is normal or nearly so, may occur when the accommodation is weakened, as frequently happens from any debilitating disease. In this condition excessive nervous innervation is required by ordinary accommodation. This excessive nervous innervation of accommodation results in excessive convergence innervation and squint. We, therefore, frequently get the history that the child's eyes were perfectly straight until after measles, flu, or scarlet fever, etc .

Still another factor favoring squint development is where the vision in one or both eyes is rendered obscure or difficult by opacities in the cornea, lens media, or fundus. The child attempts, as in refractive errors, to overcome the difficulty by excessive accommodation. Still another factor is lack of fusion sense, which may be absent or weak, just as we have color blindness. The eyes have no incentive to fuse images and hold in line.

Squint, in all these cases, usually occurs only at times, especially when looking at close objects, and may be absent for distance. It is only periodic. However, following Sherrington's law that excessive stimulation of the center for one movement produces an inhibition of the center for the opposing movement, we soon have added to our convergence excess, a divergence making it increasingly difficult for the child to hold its eyes in line.

Added to this, it is quite certain that when a child sees double, as in the adult, it causes confusion and considerable subjective disturbance. It is, therefore, in the child's interest from the standpoint of clarity of vision, to make the periodic squint which it cannot prevent, a constant squint in the first place, and, in the second place, increase the squint so as to separate the double images as far as possible, so that one image may be readily neglected. Having separated the images widely the child then develops the mental habit of suppressing or disregarding one image, much as we do voluntarily on sighting through a microscope with both eyes open. By this method the child secures single vision and it soon becomes impossible to elicit the history of double vision and it can be actually demonstrated only by complicated tests.

This mental habit of suppression or disuse results in rapid and permanent loss of acuity of vision in the eye and, once firmly established, even though the squint is corrected later, the eye remains sightless. Anatomically the eye-ball, retina and fundus are normal. The condition is known as amblyopia exanopsia. The opposite condition exists in myopia, or near-sightedness. The child does not need to use any accommodation to see close objects and develops thereby a divergence excess and finally a divergent squint.

While the above are factors favoring the development of squint, we have opposed to them the natural desire for single vision, the congenital faculty whereby we fuse the images seen by each eye separately into one clear binocular stereoscopic picture and which gives us, in addition to clarity, a sense of depth perception.

The management of any squint case, therefore, involves a careful diagnosis as to the cause, a check of the nervous system from cortex to periphery for congenital defects, injuries and disease, a study of the muscles themselves for absence, anomalous attachment or development and, finally, a thorough examination of the eye-ball itself for congenital, acquired defects and refractive errors with all its complicated problems of physics, physiology of accommodation, convergence, conjugated deviation, fusion faculty, binocular vision, etc.

It is no wonder we have hundreds of methods of treatment based on varied principles. We can appreciate why no one method can possibly be applied to all cases successfully.

I shall only outline a few methods we have found of value in a majority of the usual cases, remembering that the development of squint in a child generally means a combination of many factors favoring it, as opposed to the factors favoring simultaneous use of our eyes.

We must prevent obscurity of vision due to scars and opacities in the cornea, lens, media and fundus, so far as possible. The care of the eyes begins at birth. The Crede method avoids sight-depleting scars which later may lead to squint; congenital cataracts may be needled and absorbed, saving the eye from disuse and possible squint.

Prophylactic medicine is the medicine of today. Worth has demonstrated that squint can be prevented and successfully treated under the age of five or six years. It is much more frequently successful than treatment in later life.

Most important in the management of squint, is the optical correction of any refractiva error. Worth maintains no infant is too young to wear glasses should they be required, even tying them on. It is remarkable how well they are worn.

We must prevent the loss of vision in the squinting eye from disuse. This is accomplished by occluding the "good" or fixing eye for certain periods by bandaging, frosted glass, etc. A simpler method, especially in young children, is to atropinize the fixing eye.

We attempt to train the fusion sense by the use of the stereoscope and amblyoscope. This is most successful between the third and fifth years.

Bar reading; muscle exercise with a pencil or prisms aids in establishing binocular vision.

If the squint is not corrected by the above methods, we resort to operative interference.

The above management should always be instituted first and while these methods may not succeed, they at least minimize the squint and maintain vision, leaving less to e done when it becomes necessary to resort to operation. They also are of value postoperatively.

Operation to correct squint is really a plastic operation and requires plastic sense to the highest degree. We must not only correct for a cosmetic result in any given position, but must restore, also, physiologic function. We must take into consideration not only the straightening, but also the physical condition of the muscles, because in long continued cases they may be stretched, atrophic, fibrous or hypertrophied and their post-operative function thereby influenced. Operation, therefore, must not be entered into lightly or without considerable thought and complete examination.

The indications for operation are present when all factors favoring squint have been removed as far as possible and all the above orthoptic methods have been thoroughly tried and have failed. Operation, furthermore, should not be attempted before seven years of age (alternating squint may be an exception) because there is a tendency, as development proceeds, to divergence, which accounts for some spontaneous cures.

Another advantage gained in waiting is that, in older children, it may be done under local anesthesia and our results gauged accurately on the table.

Operations are designed: (1) To weaken one muscle action, or (2) To strengthen another muscle action, or (3) Both may be combined in marked cases. Weakening a muscle action is accomplishhed by tenotomy. It generally gives a fifteen to twenty-five degree straightening.

There are numerous types of operation described, but all have the disadvantage that we cannot tell how far the tendon will retract before reattaching to the globe. It may even slip too far and convert one type into another. For this reason we now employ, where tenotomy is indicated, muscle recession, a recently devised technic. The muscle is thoroughly freed and cut, as in tenotomy, but the tendon stump is receded and reattached to the sclera at the desired point by a scleral stitch and anchored to the original tendon insertion.

Strengthening a muscle is accomplished by advancing its attachment further forward on the globe. This operation is generally favored over tenotomy but also has many technical disadvantages: danger of stitches slipping, etc. To overcome this situation, various forms of tucking operations have been devised to shorten, thus strengthening, the muscle. However, the operation we find of most value is actual resection of a portion of the muscle and reattaching it to the original stump. These two operations, either separately or combined, seem to us to approach more nearly physiologic conditions.

In conclusion, I wish to remind you of the importance of early attention to squint and prompt removal of all factors favoring its development .

Orthoptic exercises are of great value in minimizing the degree of squint and in retaining vision and fusion faculty before operation and in restoring function post-operatively.

Operation must not be performed too early and only after thorough study of the cause and condition of the muscles. In alternating squint operation may be used earlier than in other types.

Of the operations for weakening muscle action, we have found muscle recession of advantage over ordinary tenotomy.

Of operations for strengthening muscle action, resection is of advantage over advancement or tucking.

TREATMENT AFTER HEMORRHOIDECTOMY

W. R. JAMIESON, M. D.
El Paso, Texas.

There is a widespread idea among the laity that, after an operation for piles, the patient usually suffers the tortures of the damned. Excluding the nervous timid patient, who magnifies discomfort into pain, in a great many instances there is justification for the belief. This is usually due to faulty technic in the operation and in the after treatment.

The first essential of any hemorrhoidectomy, either by clamp and cautery or ligature, is thorough dilation of the sphincter. This is accomplished only by stretching for at least ten to fifteen minutes, until the anus is wide open. The after-pain of a hemorrhoidectomy is usually due to contractions of the sphincter pinching the raw surfaces left at operation. It was formerly the custom to insert a large tube, wrapped about with gauze and smeared with petrolatum, in the rectum, the reason given being to allow free exit for gas. This was removed in two, or three or four days with much pain and profanity on the patient's part. Fortunately for the patient, most of us have abandoned the procedure.

Hemorrhage is sometimes a complication. Some oozing is to be expected and is easily controlled by a large triangular pad applied to the anus and held in place by a T binder. Arterial hemorrhage should be sought for and ligated.

Embolism may occur as late as the eighth day after operation and may be fatal. Treatment, of course, avails nothing, but the possibility should always be borne in mind and the patient not allowed up too early.

Traumatism, coming from handling of the tissues around the anus, frequently results in edema of the urethra, with consequent inability to urinate. It may be necessary to catheterize the patient, using, where possible, a soft rubber catheter. Sometimes only a silver catheter can be passed. In either case, strictest aseptic precautions should prevail, as an attack of urethral fever, or even infection of the bladder, may be brought on by careless manipulation.

Pain is the most important symptom complained of. It is the duty of the surgeon to see that the patient is as comfortable as possible. As has been said, thorough dilation of the sphincter is an essential of a good operation and does more to allay the after-pain than any procedure. In highly nervous patients a few doses of codein are helpful.

The next thing to occupy the patient's mind is the dread of the first stool after operation. I have found that the administration of mineral oil, beginning with two tablespoonsful on the evening following the operation and repeating each night until the bowels move, gives a soft oily movement expelled without pain or damage to the raw surfaces.

In the external or thrombotic hemorroid, the pain after operation is not severe, but the patient may complain of discomfort. This is best relieved by hot sitz baths twice daily for twenty minutes. These also serve to check oozing and promote asepsis. In this variety of piles it is not necessary for the patient to stay in bed.

SOME INTERESTING SKIN DISEASES OBSERVED IN NATIVES OF THE TROPICS

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Albuquerque, N. M.

Every medical man practising in the tropics sooner or later becomes interested in diseases of the skin. One observes not only the cosmopolitan skin diseases, but also a host of dermatoses peculiar to a hot, moist climate, with special reference to the dermatomycoses. A recent article on this particular subject appeared in SOUTHWESTERN MEDICINE in February of this year.

The following cases, with the exception of case number seven, were observed by the author in the clinic of the Central Hospital Bangkok, Siam. Case number seven was seen in consultation in the Charity Hospital, New Orleans, La.

CASE I. Papillary Adenoma of the Sweat Glands

The patient, an adult male Siamese, appeared in the clinic complaining of wart-like growths (Fig. 1) covering a considerable part of the body and present for some seven years. They were painless, slow in development, and, with the exception of a large tumor on the back non-ulcerating. The patient's history was irrelevant, his Wassermann negative, and he stated that no other members of his family, immediate or remote, had suffered a similar condition. Treatment consisted of removal of all of the growths by operation, and on section they were found to be papillary adenomas of the sweat glands. This is not a common condition. Although not of a malignant character, these growths are potentially carcinomatous on account of the tremendous amount of epithelium found lining the dilated gland spaces.

The section (Fig. 2) is from a small nodule. In the older tumors the entire mass is made up of dilated sweat glands and many of the spaces are occupied by clusters of epithelial tissue.

Fig. 1 (Case 1). Papillary adenoma of the sweat glands.

Fig. 2 (Case I). Microscopic section of papillary adenoma of the sweat glands.

CASE II. Dermatitis Cupoliformis

This is a peculiar disease first described by Castellani in 1914 and reported by him from Ceylon. It is caused by a streptococcus belonging to the erysipelatous group and is called "Streptoccus tropi-

calis Castellani, 1914." The disease begins as a superficial, itchy, maculo-dermatitis. Gradually the spots enlarge, become infiltrated, elevated and cupoliform (Fig. 3). Eventually the nodule breaks down and there is a central ulcer. These ulcers are painful and difficult to cure. The disease lasts for as long as eight to twelve months. Treatment consists of local antiseptic applications and autogenous vaccines.

Fig. 3 (Case II). Dermatitis cupoliformis.

CASE III. Tinea Labialis

This is an interesting dermatomycosis, first described by the author as occurring in natives of Siam who chew betel-nut. The fungus may be rocovered from the skin lesions and also from the betel-nut cud. It responds to the usual fungus disease treatment, if the patients will stop chewing betel-nut. It is an itchy, scaly dermatitis producing a peculiar ring-like appearance around the mouth, due to the profuse flaky desquamation (Fig. 4).

Fig. 4 (Case III). Tinea labialis in betel nut chewer.

CASE IV. Endothelial Sarcoma of the Tongue

The patient was a male Siamese who came to the clinic to secure relief from an ulcerating growth of the tongue of several years duration(Fig 5). He had postponed treatment until it was impossible for him to take food. He is an old betel-nut chewer. The entire tongue was removed, there was very little grondular involvement. On section (Fig. 6), the growth proved to be an endothelial sarcoma.

Fig. 5 (Case IV). Endothelial sarcoma of the tongue in betel nut chewer.

Fig. 6 (Case IV). Drawing of microscopic section of endothelial sarcoma shown in Fig. 5.

CASE V. **Granuloma Fungoides** (Fig. 7).

This was the only case of granuloma fungoides recognized during a period of ten years. It was most typical in its evolution; there were four well defined stages; dermatitis, infiltration, tumor formation and ulceration. The section shows the typical cellular infiltration (Fig. 8).

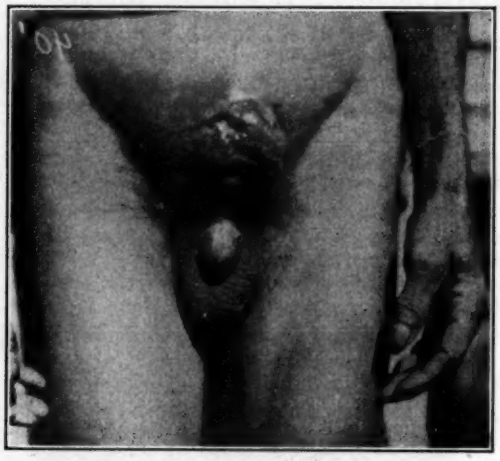

Fig. 7 (Case V.) Granuloma fungoides.

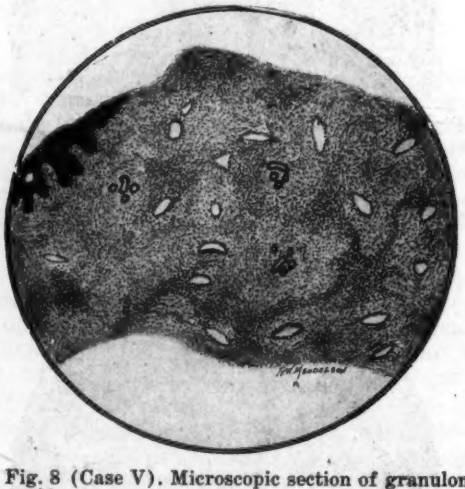

Fig. 8 (Case V). Microscopic section of granuloma fungoides.

CASE VI. **Basal Cell Carcinoma Originating in Sweat Glands.**

A female Siamese complaining of a "swelling" behind one ear, following the piercing of her ears for rings. On examination, the "swelling" was found to be a firm tumor with superficial ulceration (Fig. 9). It was of several months duration, the exact time cannot be determined. On removal and section it was found to be a basal cell carcinoma originating in the sweat glands (Fig. 10).

Fig. 9 (Case VI). Basal cell carcinoma originating in sweat glands.

Fig. 10 (Case VI). Microscopic section from basal cell carcinoma originating in sweat glands.

CASE VII. **Chronic Glanders** (Fig. 11).

This case was seen in consultation in the Charity Hospital, New Orleans, La. The case had been diagnosed as syphilis and also as carcinoma. The patient had received considerable anti-syphilitic treatment and also for the supposed malignancy. The nature of the disease was suggested by the character of the lesions, the fact that all previous treatment had been of no avail, the negative blood findings and the epidemiology. This last point was of considerable value. The patient had always lived on a farm and taken care of horses. The diagnosis was confirmed by isolating the bacillus in pure culture.

Fig. 11 (Case VII). Chronic glanders, resembling malignant growth.

OPPORTUNITIES FOR POST GRADUATE STUDY IN VIENNA

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Read before the New Mexico Medical Society, at its forty-sixth Annual Meeting, Albuquerque, N. M., May 10-12, 1928.

At the present time it seems to be very popular among physicians to visit foreign clinics. They like to travel in crowds and have the clinics demonstrated to them like a Harvey Tour; witness the high pressure itinerary of The Post Graduate Assembly of America, for instance, or the annual cruises of The American College of Surgeons. And one is often asked, whether opportunities for study are better over there than ours are here in America, and whether they are more advanced in any of the fields of medicine than we are here at home. This latter question, of course, will never be settled, for among human beings, including doctors, there are always the two great classes—those who think their own the only way; and those who think that the way the other fellow does it, if it is different, must be better than our own.

Circumstances made it possible for me to go to Europe last summer, and to spend considerable time in Vienna, and I think it may be of interest to you to know just what opportunities are there for one who wishes to broaden his outlook upon the field of his chosen profession and to gather what he may that will be of service to him in his daily work.

From what little I saw, I think that general methods of procedure in surgery, at any rate, are much alike in the various countries of continental Europe, so that, if one became familiar with the clinics of Vienna, for example, he would have a pretty good idea of how the profession functions throughout most of Europe.

The disadvantage that the average American doctor labors under over there, is his inability to understand or speak any language but his own. In Vienna they have fully recognized this handicap, and have developed special courses of instruction in the University in English, so that this University is rather unique in Europe, in having courses in all branches of medicine for English-speaking physicians. These courses and their relation to the curriculum in the postgraduate school of the Medical College are arranged by the American Medical Association of Vienna. This Association is fostered by many of the leading physicians and surgeons of America and the active part of it is made up of those foreign physicians who happen to be taking work in Vienna at any particular time. Of course, its membership is not limited to Americans.

The Association has a very practical suite of rooms over the Edison Cafe in Alser Strasse, immediately across the street from the Algemeines Krankenhaus, the largest hospital connected with the University. It has two full-time employees, both Austrians, who speak English well. The president and board of directors are elected every six months from among the membership residing in Vienna at the time, and of course, the principal officers, at least, must be men who expect to be in Vienna for six months.

When one arrives in Vienna, he registers at the Association, paying a membership fee of $10.00, which entitles him to enroll in any of the Association courses that are offered.

These courses are short, some of them only two hours long, most of them ranging from six to twenty hours. All but a very few of them are limited as to the number of physicians permitted to take the course at any one time. This number varies from two to ten, so that each man can get a good deal of individual instruction, and there will be no question about one's ability to see, if the course is a clinic or a demonstration. This close contact is one of the attractive features of the instruction in Vienna. Even in the surgical clinics, one is allowed in the pit, where he can see at close range all that is being done. There is no aloofness, no snobbishness, no better-than-thou attitude among the professors, which may be due, of course,

to the fact that it is money in the pocket to be otherwise; but that is not the only reason, for it is very apparent that many of the men are born teachers and are in love with their work.

The instructors in these courses receive five dollars an hour, United States money, and this is prorated among the men taking the course. In two men courses, one pays two dollars and fifty cents an hour for each hour of instruction; in ten men courses only fifty cents. The cost of instruction during one's stay in Vienna, therefore, will depend upon the kind and number of courses a man selects. The Association estimates the cost to be between fifty and two hundred dollars a month. Work begins at seven in the morning and continues without intermission until seven or eight at night. Besides these special courses, all members of the Association are permitted to attend the surgical clinics that are in progress at all of the various hospitals daily. There is no end of work and one can take as much or as little as he chooses.

As would be expected, some of the courses are very popular, others not so much so. And the Association rule for meeting this difficulty is to permit the men who have been longest in Vienna first chance at any course. When a course is to start, a notice is put up on the bulletin board, or any one wishing any particular course may ask to have it posted. The notice states the date of beginning, the number of hours it will run, and the number of men permitted to take it. Then men wishing to take the course sign their names to the notice, until the limit of membership is reached. The notice must remain posted for twenty-four hours after the quota has been filled. During this time, should an "old timer" wish the course, he may sign his name at the bottom of the list which automatically "bumps" the most recent arrival. After twenty-four hours, however, the course is marked "closed" and no further changes can be made in it. Under this arrangement, while one may get a great many courses at the University, during a short stay, still, if he wishes to get all that he wants, he may have to stay for some little time.

The courses and clinics that impressed me most were those in Anatomy, Cadaver Surgery, Pathology, Endocrinology, Gynecology and Fractures.

If they excell us in Europe in any of the branches of medicine, it is probably due to the stress that they place upon anatomy and pathology, and the thorough training one gets in these branches as a foundation. The Anatomical Laboratories and Museum are housed in a very imposing building which is listed as one of the places of interest for tourists in Vienna to visit. And the sculpture and other decorations on its exterior and in the corridors speak for the high esteem in which the department is held by the State. One pays a small fee to visit the Anatomical Museum just as he does to visit the Museum of Natural History or one of the many Art Galleries of the city. And, like these, it is open to the general public.

One can get, at a very reasonable cost, whatever anatomical material he may wish for dissection and study, and he can get courses in the surgical anatomy of every part of the body, in which the demonstrator, with the aid of actual dissection, and most varied and complete mounted specimens from the museum, demonstrates every phase of the subject in hand. If one takes these courses in conjunction with cadaver surgery, in which two men work upon the fresh cadaver, under direct supervision of assistant professors of surgery in the various hospitals, getting any kind of operative procedure one may choose, there is, indeed, excellent opportunity for learning the necessary surgical anatomy and the fundamentals of operative technic and procedure.

I know of no place in America where one can study gross pathology as he can in the clinic of Professor Erdheim at the Jubilaums Hospital. This particular clinic is given in German, but the demonstrations are so clear and so painstaking that even those who know nothing of the German language take the course and say that they get a great deal out of it. To one understanding even a little German it is a mine of information, and gives one an insight into disease processes that is invaluable.

This is probably the most popular course in Vienna. It is not limited as to numbers, and is always crowded. The method of demonstration may be of interest. The Jubilaum Hospital, besides being a general hospital, has a large department for the care of old people, so that several thousands of patients are cared for there. One whole building, The Pathological Institute, is given over to Professor Erdheim. Here, under his supervision, as the autopsies are performed, all pathological organs and tissues are removed intact. This means an entire pelvis, a spinal column, a femur, a thigh with an exposed femoral artery or vein, as well as the viscera. No amount of painstaking dissection is too much to gather the whole of the pathological picture into the clinic. After removal, all specimens are placed in a large refrigerator so that, on three afternoons of

each week, there are from six to ten complete autopsies to demonstrate to the class.

At the demonstration, Professor Erdheim first reads a short synopsis of the clinical history of the case, then the clinical diagnosis; then he demonstrates the pathological findings, and correlates the symptoms with what has been found at autopsy. He is one of those rare teachers whose interest and enthusiasm in his work never falters, who makes every day's work as fresh and snappy as if it were the first time he had seen the conditions himself. His material is so abundant that he is able to demonstrate at a single clinic, or at two or three successive clinics, most of the various clinical pictures in any pathological field. In one or two clinics he would show half a dozen more or less typical cases of apoplexy with its early and late manifestations, for example; or carcinoma of the breast, its various types, modes of local and metastatic extension. One may judge of the amount of material, also, by the fact that during the few weeks while I was there, he was able to demonstrate such rare conditions as primary carcinoma of the liver; fistulas from gall-bladder into stomach, into duodenum and into the colon; infarcts into spleen, kidneys, muscles and skin from a septic thrombus in the femoral vein made possible by a patent foramen ovale; and intestinal obstruction from a large gall-stone. Also what I hope is a rare condition, a gastro-enterostomy in which the surgeon had completely closed the stoma that he had made with his sutures and the patient had starved to death with the diagnosis of persistent vomiting due to vicious circle.

Another of the very popular clinics is the one at the Unfall, or Accident, Hospital presided over by Professor Boehler. Here one sees most brilliant results in injuries of bones and joints, without special or costly apparatus. Here, for the first time, I saw fractures and dislocations reduced under local anesthesia. It is certainly a most satisfactory method, appreciated not only by many patients who dread general anesthesia, but by men who are working alone away from the facilities of a hospital. In a Pott's or Colle's fracture, for example, ten or fifteen cubic centimeters of one-half per cent novocaine, injected on either side of the limb, between the broken bone ends, will, in a few moments produce anesthesia and relaxation, so that one can manipulate the broken part, reduce the fracture, check it with the x-ray, and then do it all over again if he needs to. In the same way, the solution injected into the joint cavity, in a dislocation, will permit of reduction without pain. The patient is comfortable, he is ambulatory, and he can be taken care of anywhere, with almost no assistance. In this day, when the automobile has required all of us to handle more and more fractures, it is a method worth knowing.

Professor Boehler does not use a great deal of diathermy, artificial light, massage and hydrotherapy in the after treatment of his fractures. He insists on a natural and comfortable position for the broken limb, and then he insists on immediate and continuous passive and active exercise of the neighboring joints, and the use of the limb in every way possible. For example, he puts a cast on a broken ankle as soon as it comes under his observation. The foot is held in slight eversion instead of inversion, because he thinks many of our notions about subsequent weak foot are all wrong. The plaster cast is placed next the skin with no protective material intervening. It is molded to the leg even with considerable pressure, so that there shall be no separation of the joint space. Over the foot it is very broad so that there shall be no crowding of the toes. Twenty-four hours later, a U-shaped steel bar is placed under the heel with the arms of the U extending up the sides of the leg, where they are incorporated in fresh plaster. Within another day or two the patient is up walking about the ward on the steel bar. And it is the use of the neighboring parts of the limb that reduces the disability and the time of complete recovery, according to Professor Boehler.

I shall mention only one other clinic, that of Professor Werner for diseases of women. Professor Werner was a former assistant of Professor Wertheim, whose name is so familiar in connection with the radical operation for carcinoma of the cervix. If refinements in surgical technic are superior to ours in America anywhere in Vienna, it is in this clinic. All procedure is absolutely systematized, and Professor Werner can remove the entire pelvic fascia, and practically all of the vagina, from above, in less time than it takes most men to do a supra-vaginal hysterectomy. The method of vaginal hysterectomy, too, looked very simple, and was certainly very rapid and could be applied to a much larger uterus than we are accustomed to see removed by this method. After opening the peritoneum between uterus and bladder, the blood supply was controlled by the use of sutures introduced with ligature carriers along both sides of the cervix. The uterus was then bisected longitudinally, and each half slipped out and removed separately.

Of course, I saw the work of Professor

Pfinsterer, who has made such a stir in this country because of his radical stomach resections for even small duodenal ulcers, which he does entirely under local and splanchnic anesthesia. Stomach resection for ulcer is quite universal on the continent, but, whatever its merits, it is not a method for the use of men doing stomach surgery occasionally in small communities. Splanchnic anesthesia, on the other hand, is worth knowing.

I visited one other clinic outside of Vienna, that will interest men doing surgery here in the Southwest particularly—the clinic of Professor Sauerbrook at the University of Munich. Unfortunately he was not at home at the time; he was attending the International Surgical Congress in South America. But I saw all of the cases of lung surgery that were in the hospital at the time; his assistant went over them, perhaps, even more completely than he would have done, and I was, indeed, much impressed with the results that he seemed to be getting in selected cases of pulmonary tuberculosis. My impression was that he extends the indications for extra pleural thoracoplasty to cases more hopeful and less far advanced than we have been accustomed to put in the group for operative treatment.

The cost of living in Vienna is cheap compared with the cost of living in American cities. One can live as well as he wishes for from $2.50 to $3.00 per day, and he can get along on very much less. Vienna is a beautiful old city even after the disappearance of all of its imperial splendor, full of places of historical interest and of works of art. It is situated in a beautiful mountain country, making one think of our home in parts of New Mexico. Its people are a quiet, home-loving folk, whose pleasures are simple, wholesome and healthful, such as walking, mountain climbing, sun bathing, chess playing and card playing, not to forget beer drinking. They are kind and considerate of strangers, and anyone having the time can spend a very profitable and enjoyable few months among them.

DISCUSSION

DR. O. S. FOWLER, Denver, Colo.: While Dr. Crail was reading his paper, a couple of thoughts came to me, one of which is quite pertinent to us Americans. In regard to Dr. Crail's account of the treatment of fractures of the ankle in Vienna, we, as Americans, I think, look with a good deal of admiration on the methods and technics in vogue in foreign countries, and we fail to see, sometimes, the thing that is close at hand to us. The point I want to bring out particularly, is this: Two years ago, in Pueblo, one of our rather unknown men of the State demonstrated this very thing that Dr. Crail brings back from Vienna. He had treated a man, not with a fracture at the moment, but walking around on a splint cast that carried the full weight out of the ankle. Strange to say, he could not even get his idea published in the state journal. Now, Dr. Crail thinks well enough of it to bring it back after ten thousand miles of travel, and I dare say if he would take his same notes and say this was being done in Vienna, they would publish it in the journal and very likely practice it throughout the locality, and yet turn down their next-door neighbor who has been doing the very same thing. We fail to see the worthwhile things in our own province, but when somebody else with a wide reputation brings it out, we follow it whether it has merit or not. That is the thing we all do—admire that which comes from a distance, or which comes from a man of reputation, and forget the things our fellow practitioners bring forth.

The other point I want to make is this: I believe that too much attention is being given to anatomy and to the surgical side of pathology, when we are giving too little thought to the physiological side of pathology. It is my belief that the progress of surgery in the next decade is going to be from the side of the physiology of our patients and not from the surgical pathology, or we will treat them better from a surgical pathological standpoint if we first study them with the physiological side. What is the object or advantage of doing a brilliant operation if the patient dies, when maybe a little study would save that patient's life? We have given too much time to surgical technic and too little time to surgical physiology.

CLINIC OF HEART DISEASE

DREW LUTEN, M. D.
St. Louis, Mo.

(Held at the Hotel Dieu, El Paso, Texas, as part of the Clinical Congress of the Medical and Surgical Association of the Southwest, November 2 to 5, 1927.)

CASE I.

Patient of Dr. G. Werley.

History: Watchman, age 48, looks older; chief complaint, shortness of breath; said he had a stroke two years ago; before that, was strong all his life, never sick worth mentioning until of recent years; never had rheumatism; smokes and drinks; hearty eater. Over two years ago began being short of breath on going up hills and doctor said he had high blood pressure, followed by stroke from which he made recovery. Last August had a convulsion and became unconscious. The next morning he was better, but sore over heart and had pain in arm; was confined to the house about one week; he does not remember anything about the attack.

Wife is living and well; three children, living and well; no miscarriage, paralysis or sudden death in family. He weighs 189 pounds; five feet, eight inches in height; best weight, 220 pounds; no edema; somewhat dyspneic.

First sound at the apex is rather faint. Second aortic sound, accentuated. Blood pressure, October 29, 184/20; pulse 84.

X-ray report: Transverse diameter of heart increased; also increase of transverse diameter of aortic arch.

Wassermann negative; urine, traces of albumin, no casts.

Electrocardiogram: Inverted T wave in lead 1. Left ventricular preponderance.

DR. LUTEN: Perhaps we can treat this man as intelligently without examining him, as we could if we examined him further. We have the record of physical examination, of his heart findings, etc.

Here is a gentleman who has been under the care of a doctor quite awhile, and it would be rather difficult for him to say why.

Why does he need medical attention? He hardly stops to analyze that himself; it would be rather difficult for doctors to get his complaint right on

first examination. He should be under the care of a doctor, but what would he say when the doctor asks him, "In what way have you not felt well? In what way, now, do you not feel well?" He would answer, "short of breath." If it were not for that, he would feel pretty well. We can see that his breath is not normal, as he breaths before us.

We sometimes fail to keep in mind just what the patient expects of us. Of course, there is no obligation on the part of the doctor to give the patient what he expects. If a man went to a store to buy a necktie and liked a certain tie, the salesman might say that it does not look well with this kind of suit. The salesman gets what he thinks the man should have, rather than what he wants, but if the customer insists on that certain tie, the salesman will let him have it rather than lose a sale. Now, there is no obligation on the part of the doctor to give the kind of treatment the man wants. Just what does he expect of the doctor? What service is it, then, that we are bound to offer? Why, relief of his shortness of breath, if possible, whether it is by the means he thought should be used or not. If we see something he does not know about, that might be related to his shortness of breath, we take account of that.

But we cannot lose sight of the certain proposition that the man comes for shortness of breath. We examine him; we get his history, but we do it knowing that shortness of breath is caused by one of two things. There is something the matter with his heart; perhaps other organs too, but we feel sure there is something the matter with his heart. Does it matter very much in the proper handling of his case, as to the details about his heart? We know it is not performing its functions properly. If it were, he could not be short of breath. In other words, the shortness of breath comes from a dysfunction of the heart.

We do not know just what is the trouble with his heart. For instance, you go down the street and come to a bank that is closed. It has been open, but now it is not functioning; it has failed. You do not know what caused it to fail, whether dishonest officials, or bad loans or poor investments; all you know is that it has failed; it is not functioning. However, after examining the heart, from the data we have, whether we know all the details or not, we can give him good advice. We can test him properly; not quite so well, perhaps, as if we knew something more about him. But without knowing anything further about the heart, we fell pretty sure it is not functioning properly; so the question is, "What can we do to help him make it function better?" He knows that, if he puts an increased call on his heart, his symptoms increase. He does not realize that increased muscular activity is putting greater demands on the pump that is sending blood around. Now we have one or two things we can do for him. We can go into detail and advise him how to lessen the demands on this organ which is not functioning well, and we can do that in a way that will impress it upon him. Which is more important for this man—to write him a prescription and then see the next case, or to sit down and go over with him his own environment? Ask him in what sort of a house he lives. Does he live up stairs? Does it make him short of breath to climb stairs? Perhaps he climbs stairs six or seven times a day. At any hate, is it not important to go over with him the details of his environment and relationship to his activity and see if we cannot cut down the muscular activity involved and bring about a lessened call on this organ which is failing? While it has not yet gone out of business, is it not more important to show him how to help his case; to take some of the load off this organ; to make one or two less trips a day upstairs, or perhaps not make any trips—to show him how details of his business (if he has some business) are likely to get him excited, or angry, or worried, and put a demand upon his heart? After all, these things are more important to him than any medicine we can give him. Is there any medicine under the sun we can expect to change his heart back to normal?

What is the matter with his heart? After all, that is a matter of secondary importance. I do not want to makke any exaggerated statements, but suppose he has a mitral stenosis, aneurism, or a hypertrophied heart. We are convinced that heart is not performing its function well. Our only business is to help that man's heart perform its functions. If we do something that would assure him that his heart would pump blood properly until he was 80 or 90 years old, or as long as he wanted it to go, he would not care what heart disease he had, would he? Aside from the question of pain, all he wants from his heart is to pump blood properly. Then the thing he expects of the doctor is to get his heart to functioning better. It may be that the doctor can do that by treating his heart disease; but we can help him lessen the load on his heart. Sell him the proposition, not by saying 'don't do this and don't do that,' but by showing him how those things help, and convincing him it is worth his while to do them. Take more time to go over the details.

What is his heart disease? Dr. Werley said his heart was enlarged, second sound accentuated at base, has had a hypertension. I believe we would ordinarily say he has hypertensified heart disease, as the disease is called which we often associate with hypertension. The treatment of that disease, then, would be looking to the treatment of hypertension, or to undoing in his heart the effects of hypertension. We do not expect to do much there. Any medicine we give him, then, we must give him from one of two standpoints—to cure the heart disease, or help his heart irrespective of disease. For instance—digitalis. What does it do? In what way do we expect digitalis to lessen the enlargement of his heart, or to make it larger, to increase the amount of muscle, to act as an antitoxin to toxin that might be in his body. We expect it to help his heart do its work better. It seems to me that it will do that.

Q. Have you had swelling of the ankles at any time?

A. No sir.

Q. Have you had swelling or tenderness of the abdomen?

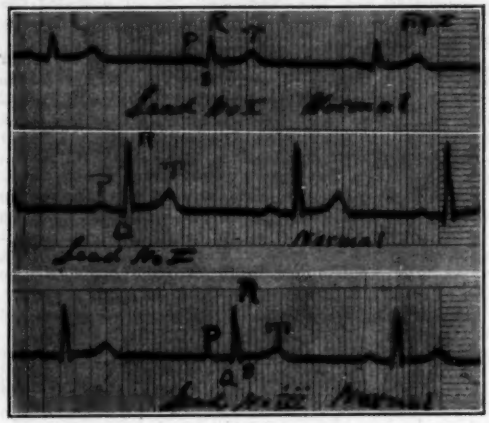
A No sir.

Examination as fol'ows: Heart is regular, rate perhaps slightly increased; apex is pretty well to the left with systolic murmur. Does murmur add much to the diagnosis? What is the cause a murmur? Does it mean he has some disease of the mitral valve, or possibly a dilatation of the ring, without anything the matter with the valve? In either case, do we expect medicine to do anything to the mitral ring or valve? What is the indication for digitalis? Is it that he has a mitral murmur? Is it that he has hypertensified heart disease? We are giving him digitalis for what purpose? Sometimes we do not think quite clearly enough ourselves in this situation.

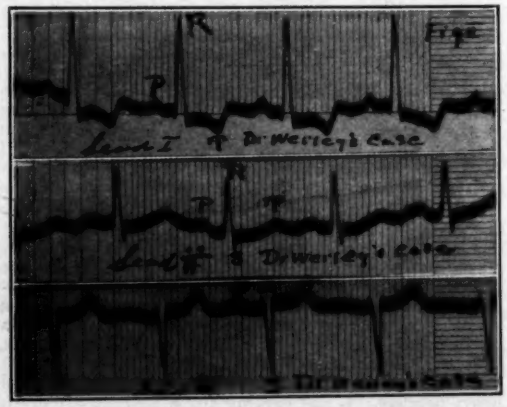
The cardiogram is one of the means of understanding better just what the situation is in the heart. People often discuss whether the cardiogram is more important than something else, or less so, or whether you can treat a person without a cardiogram. These are rather useless questions. Can you do pretty well in examing the chest without a stethoscope? Here is a man with hypertensified heart disease. I was looking for a history of coronary infarct.

DR. WERLEY: I was wondering whether, when he had the unconscious spell, he could not have had a

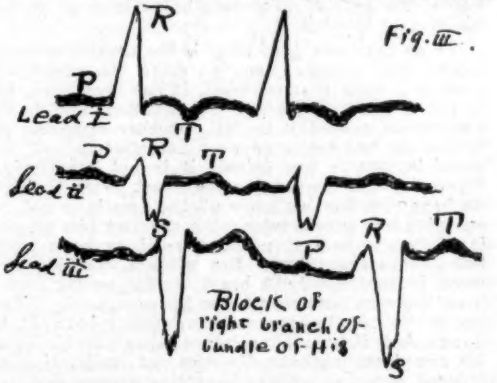
coronary infarct. When he came to, he said he had pain in his left arm and over his heart. It is with that kind of pain that a coranary infarct is likely to occur.

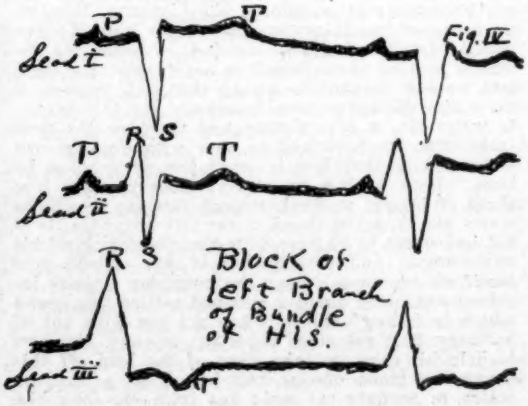


Dr. LUTEN: I agree that the history is not typical, yet the history leads to the possibility of a coronary occlusion. Whether he had or had not, we know pretty well that situation without a stethoscope. If we go over a man, and we have a cardiogram and a stethoscope and use those things we can get a pretty good idea about him without a history. What is the use of wasting time arguing which one of the methods at our hands for diagnosis is the most important? We de not want to do without any of them. The normal cardiogram is important. In the first lead in this case the wave is different. (Fig. 1). The T is inverted in lead I. There is an unright deflection of T in lead II and it is the same in lead III. What produces that? In the stringed galvonameter, when the electric current goes through the galvanometer it causes a deviation of the string when a heart muscle contracts. The electrocardiogram, then, simply means that the current has gone through the galvanometer, a picture has been made and is reproduced thereby. There must be something different here because his picture is different from that of the normal heart. Notice the difference in the T waves; there is somethinb to cause that difference. What is it? The T wave is produced by the muscles of the ventricles of the heart. It is part of the ventricular complex. Something must have been different in this case then because they give different pictures. I think we can safely say that of we had taken a record of thing gentleman ten years ago, we should have a record like the normal heart. (See Fig. I.) We do not know what it was like but there must have been sometime when he had no heart disease, and his heart was normal. Today it is different (See Fig. II). If his record has changed, something has occurred to change it. This record means a myocardial change. Dr. Werley has been interested in congenital hearts. It might not be true to say there is a congenital change. There is something different from the normal to produce a different cardiogram. The electrocardiogram is one of the means of solving the cardiac situation. The electrocardiogram records the changes in electric potential. If there were no change, there would be no movement of the string. The change in the electrocardiogram of this patient's heart shows the inverted T in lead I and opposite direction of main deflection in lead I and III. The auriculoventricular bundle branches off and divides into two main branches. (See Fig. V). Each branch has subdivisions, so that, when the impulse comes from the auricle, this impulse is delivered to all parts of the ventricle at practically the same moment. Both sides contract normally almost at the same instant, all parts get the impulse and the contraction is almost entirely simultaneous. Suppose there was something wrong with the tract; suppose the impulse did not get across this space at all. Then the impulse going down would not reach the right side as soon as the left (See Fig. V). If there was a right ventricle branch block, we would know that the cardiogram in such a situation in the first lead is more or less like Fig. III, Lead I, and the third lead, in such a cardiogram is more or less like this Fig. III. Lead III.



Suppose there is not a block on either side. A normal cardiogram is a composite of the electrical

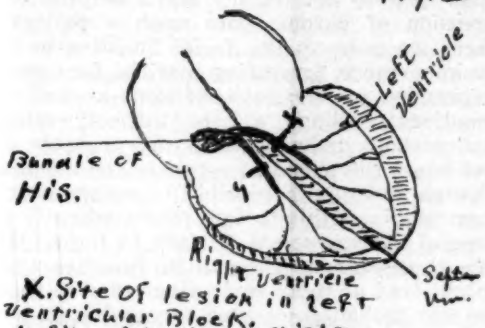




forces that take place on the left side of the heart and the right side of the heart at the same time. Suppose there is a defect in one of the branches. The resulting motions will be more like Figure III, if the defect is in the right branch.

If this patient had a defect in his left branch, it would give him a cardiogram like Fig. IV. Take a patient with long standing strain on his heart muscles, hypertension ensues, probably sclerosis. Pick out patients with the two diseases and they would be a good deal alike. A patient with hypertensive heart usually has sclerosis. We are interested in this man's cardiogram, not because it suggests a defect in the right ventricle branch as it certainly does, but as a heart that must surely have defects elsewhere. Disease would not be likely to pick out one little part of his heart. I have been much impressed with the fact that a cardiogram like this patent's suggests hypertensive heart disease, and have gone over something like seventeen thousand cardiograms, picking out all like this one, and am going to see if

Fig. V


Left Ventricle
Bundle of His.
Right Ventricle
Septum
X. Site of lesion in left Ventricular Block.
4 Site of lesion in right Ventricular Block.

those patients did not have hypertensive heart disease. Has this patient hypertensive heart disease? He has a myocardial change. His treatment would seem to be mainly in taking the load off his heart, with general measures as to exercise, and digitalis to help his heart function better.

DR. WERLEY: Has the inverted T wave any prognostic significance? I have seldom seen a man with an inverted T wave live so very long. Do you find that to be true?

DR. LUTEN: That is a very hard question to answer. To my mind it is not so much that the T wave is inverted in the first lead, but that it has a sort of relationship to the third lead, with changes so extensive as to involve branches of the bundle of His. With a patient like that, it seems to me the danger is not so much that his heart is seriously affected as that he is going to overdo. We gradually show him and convince him that he must not take much activity. As long as he does that and lives within his means he will get along about as well as anybody else. But he is not going to do that. We have to keep in mind human nature. When he gets better, he is going to get out and walk around three or four blocks. He has enough reserve power to do that and he will do it some fine morning. He has in his mind the idea that he will feel much better if he gets out and walks around a little, and you cannot convince him. It is more of a trait of human nature to use up our reserve and, because a thing like that must occur, we have a bad prognosis in these cases. While I have not specific figures to say how long a man will live, certainly a man with a heart like this, and the history he has, is running on a thin margin of activity. (Note: Patient died four months later).

Case II.

Patient of Dr. Rheinheimer.

(Patient's record not submitted for publication)

DR. LUTEN: The doctor's description and the patient's appearance would indicate exophthalmic goitre rather than an abnormal heart. She has some exophthalmos, as we can see, and basal symptoms are those of exophthalmic goitre. Our problem, then, is whether that has affected her heart, and if so, how. She is going to be operated, which would certainly seem to be good treatment. One might discuss the details of that, as to whether the patient should have a preliminary rest period, etc. I rather agree with the concensus of opinion at present, which is that removal of the thyroid offers not only a removal of the cause, but is the best way of getting rid of autointoxication. Now our problem is whether that has affected her heart or not. The heart is affected by various intoxications. The question of whether thyroid intoxication affects people's hearts, and how, is one that has received a good deal of attention recently. I think most of us feel that there is a thyroid heart disease. Of course, the question is complicated a little. Any intoxication may give tachycardia; there might even be an increased respiratory rate; there might be symptoms often associated with heart disease, but when the system is free from that intoxication, there is no evidence of a permanent affection of the heart.

One question might be whether the disease has progressed so far as to interfere with cardiac function; for instance, has the patient had any signs of heart failure? I should like to emphasize again the difference between her disease and heart failure. They are not the same thing at all. That is true of any organ. A man may have a serious disease of the eye, but the function of sight has not failed, his functional test might be perfect. The importance of that disease is, however, that it might lead to impairment of the function.

Q. Have you had any swelling of the ankles at all?

A. No sir.

Q. What has bothered you? What is the thing that caused you to go to the doctor in the first place?

A. My appendix. I had an awful pain in my side and felt it was my appendix. so I went to the doctor; I did not go on account of the goitre.

Q. Had you ever been to a doctor on account of your goitre?

A. No sir, not before.

Q. You had this pain—did it last long?

A. Yes sir, it hurt me for about six weeks.

DR. LUTEN: It seems to me, as I have said before, that the doctor's obligation is not what the patient wants, or thinks he wants. The doctor's obligation is to advise the patient about any important point in connection with his condition. This lady had a pain in her side which she thought was her appendix. Without going into that at all, certainly it requires no extensive examination to make us decide that the most serious thing about her is her goitre. She rather gives us the impression of undue nervousness, though she is holding herself down pretty well.

Our question is, has this thing affected her heart, and. if so, is there anything we can do to help the cardiac situation? First. we shall try to decide whether the heart is affected or not. The evidence which has been mentioned so far seems to be thyroid intoxication rather than about her heart. The doctor says she has tachycardia. That is not necessarily a sign of heart disease.

Examination of the heart by Dr. Luten: She has a very marked sonorous arhythmia. The rate varies: when she takes a breath it speeds up a little, and then slows down. She has a pretty loud systolic murmur. I do not detect any thrill.

The question of therapy is one I think we may differ about. This woman comes into a heart clinic; not a thyroid clinic. We all agree that she has a thyroid lesion; perhaps we will all agree that lesion is hyperthyroidism and the consensus of opinion would be that she would be better having the thyroid out. Some might differ about that. But the best evidence of the present is that thee quickest and surest way is to take the woman's thyroid out.

If we do operate and she is not one hundred per cent well in one to five years, it does not argue at all that she should not have been operated.

Now, the patient is in a heart clinic and we are discussing this thing from a different standpoint. She has a fast heart; a heart that has been kept high by thyroid disease. Has it damaged that heart? That is difficult for me to say. I think a cardiograph would be of great help in deciding whether and how much the heart has been damaged, though it would not tell the whole story. So far as thereapy is concerned, the doctor has been giving her digitalis, and, though it is a customary procedure, I rather question it. Why would one give her digitalis? What purpose would he have in view? It is said that digitalis slows down the blood in children but I have never seen this happen with an adult, and I have been looking for it for a long time. It must occur sometimes because competent observers have reported it. I rather think that digitalis will not serve now, in spite of any heart disease she may have, as she certainly has none of the signs of dysfunctiion, or heart failure, or insufficiency. She is not particularly short of breath, has no edema. Digitalis will not counteract the effects of thyroid intoxication. Suppose the patient had an indication that the ventricle muscle was not getting the blood supplied properly, then there would be an indication for digitalis, and I am convinced it would help her. It would not help her disease, but it would do something to her ventricle to help it perform its function better, so that would be a vindication.

I have no doubt, even though these gentlemen gave her digitalis because they thought I wanted them to, whatever their feelings about the matter might be, that some of us feel differently about it. I should like to have a little discussion about the matter. Is there any considerable difference of opinion about the administration of digiltalis to such a patient?

DR. WERLEY: Dr. Rheinheimer and I have had six or eight hyperthyroid cases at our clinic and we have been experimenting with iodine to see what results we would get. We have not given any of our patients digitalis; we did not think they needed it, and gave it to the patients here this morning only because you stated in your letter you would like them digitalized. If there were indications of a dilated heart, edema and dyspnea, I would give it, otherwise I would not.

DR. LUTEN: I appreciate very much your trying to follow out my suggestion. I want to clear my own skirts, however. I wrote that in cases for the clinic I would like to have those who had had digitalis and those who had not. In a patient who has any thyroid indication, digitalis is not effective in s'owing the ventricle rate, even if there is a fibrillation.

THE HUMAN TONGUE AND EDEMA

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(Read before the New Mexico Medical Society, at its Forty-sixth Annual Meeting, Albuquerque, N. M., May 10 to 12, 1928).

It seems quite probable that we, as a profession, are losing that keenness of observation that the old time practitioners were reputed to have obtained; that we have become so laboratoryzed that we fail to take cognizance of the complexion and texture of the skin, the dryness or the brittleness of the nails, the lustre or lack of lustre of the eyes, the facial expression, the general appearance of the physical condition of the patient before us. We, so often, may fail to see even an Hippocratic face when we look on an extremely sick person; we regard the physician that looks at the tongue as old-fashioned and not of our day; we do not observe the appearance of the mucous membranes. We may even not see an extreme case of anemia until the laboratory report comes back a day or two later; we may not note a considerable exophthalmos or a fair-sized enlargement of the thyroid. We do not usually see a definite expression of chronic pain upon a patient's face; we pass up the facial lineation as of no importance, forgetting that the face gives expression to physical conditions as well as emotional feeling; we see without seeing, and without understanding. We probably do not evert the eyelid to estimate the anemia, though it is quite possible to estimate the hemoglobin within a few points when it is around the low points of sixty to forty. We We thus pass up these little hunches that might lead us to an early diagnosis. In fact, we are probably not even as capable, in the keenness of our observation, as the average stockman, who can go into his herd and at a glance pick out a sick animal by the appearance of the coat, the dullness of the eyes, the general droopiness of the animal, its unwillingness to move about. We fail to recognize that there are certain and very marked physical expressions with certain illnesses, until those things are called to our attention by some older man who has been compelled to rely upon his acumen of observation rather than upon the more or less accurate findings of the laboratory, to which we have such easy access today and upon whose arm we rest so heavily. We too often fail to correlate symptoms we have repeatedly observed, perhaps over years.

The reason for writing this article on edema of the tongue is to call attention to some observations I have been making for a number of years; to give the results of a study of this particular symptom, to offer an explanation and give an estimation of its importance. I believe that it has not been regarded as a particular symptom.

We will consider the appearance of the human tongue under the circumstance of under-functioning of the kidneys in some type of obstruction in the urinary tract, and in what may properly be called water starvation. Years ago a patient, an old prostate

case, made the remark that his "tongue seemed too big for his mouth." In studying this tongue it did appear markedly thickened and looked too large; it was heavily coated and, most interesting, it had furrows running in various directions over the anterior part when it was flattened out by forced protrusion. I began to watch for this in other cases and, to my surprise, found it in cases of all ages and in cases that were certainly in the class of chronic uremics. I also found that this condition, though of long standing, could be made to disappear quite quickly by improving the general elimination and especially the kidney elimination. These tongues may have various appearances, being heavily coated usually. They may be beefy red or generally gray, but the one thing that was constant was that the furrows were present in all cases of this sort. The mucous membranes are usually pale and anemic, and there is usually more or less of edema of the ankles and shins. It must be that this thickened tongue is simply a further expression of the chronic edema of other parts of the body, and the thickening of the mucous membrane only corresponds to the almost certain skin changes to be found in numerous systemic diseases, which our dermatologists are skilled in interpreting.

I have found this furrowing of the tongue in cases of low-functioning kidneys of prostatic obstruction, with the same condition of ureteral obstruction, with the feeble function of contracted kidneys of interstitial nephritis. I have found it in water starvation; I have found it in ashtmatics; it is to be expected in the serious infections of the kidneys, such as multiple abscess of one kidney that has stood for some days, with high temperature and poor output of the other embarrassed kidney. I have repeatedly seen it in the continued vomiting of pregnancy. I recall being called in consultation as to the need of an induced abortion in a so-called pernicious vomiting of pregnancy, in which the woman was extremely ill and most sure to die unless relief were soon given. After examining the patient I said that, by the time sufficient fluids could be gotten into her to make her relatively safe to abort, I felt she would be enough better so that she would not need an abortion. Within the next twenty-four hours, three gallons of fluids were administered by the several possible methods, and, when we met the next day, she was so much better that an abortion was quite unnecessary, and she went on to term with helpful, physiological care, without further complication.

The tongue is supplied with three kinds of papillae: posteriorly, are the circumvallate, arranged in a large V; next in size are the fungiform, arranged quite regularly over the whole tongue and spaced a centimeter or less apart; over the whole dorsum and the sides and tip, are situated the filiform or conical papillae, which may have a single tip or a double tip. In the condition that I am describing, it is these filiform papillae that are most markedly changed from normal, though the fungiform are often greatly reddened and even angry looking. I am sure that there is a definite pathological change in these structures and it is, therefore, quite astonishing how rapidly these papillae may be restored to normal and, on the other hand, how rapidly they may take on pathology, even in a few days after an operation of importance has occurred. In fact, the tongue will give the first symptom of dehydration, acidosis and impending uremia, in the postoperative period.

It is true that the skin gives positive evidence of the functional ability of the general metabolic processes of the individual, and many times I have seen that the deeper tissues vary in their texture, apparently depending upon this same perverted general metabolism. Many operators have noticed that some old anemic people have fat that resembles chicken fat, and that their tissues are so fragile that care must be used not to tear a muscle from its attachments. It is, thus, not at all surprising that the tongue and membranes of the mouth should give very positive evidence of disturbed metabolism.

In the hope of obtaining an evaluation of this sort of tongue, I began a study of the changes in the appearance in relation to the blood chemistry, and I found that, as the chemistry of the blood improved, there was an improvement of the character of the mucous membranes, as well as of the tongue itself. There was also noted a similar improvement of the edema of the extremities, and of the texture of the skin, as well as its coloring; eyes became brighter and, in general, these patients were improved as to their entire observable appearance.

I began to attach to the appearance of a clear pink tongue an importance sufficient to form judgment whether a certain patient was in good enough condition to undergo a major operation, of whatever nature the illness may have been. I have found that a patient whose condition is so serious and acute that an immediate operation is necessary, having a heavy dry tongue, with a heavy coat which seems to almost crack when the tongue is protruded, is an extremely poor risk, and the first and most important treatment is to get large amounts

of fluids into him by mouth, bowel, under the skin or into the veins direct. Such a dehydrated patient will take and absorb very large amounts. I have many times given as much as from twelve to sixteen thousand cubic centimeters within the first twenty-four hours after operation, in one of these dehydrated patients; nor have I found that these large quantities of water do any damage to these individuals, in fact, I often wonder if there really is such a thing as "water-logging" a person from too much water alone. I offer the opinion that edema is due to too little water instead of too much water, in every instance, unless it might be in a failing heart, but I am very firmly convinced that large quantities of fluids are necessary to clear edemas of kidney origin.

Now, to get back to the tongue. We take, for example, a case of prostatic obstruction: a tongue with a thick heavy fur on the posterior part, the body of it perhaps actually thickened and anterior part dry, the filiform papillae hypertrophied, with deep furrows when the tongue is protruded. The patient's skin and hair are dry and harsh: his eyes are dull; he is so sluggish mentally that he may not even know his age or name (this is an extreme case but I have seen several such). How shall we treat this bad risk? First, it is my custom to drain the bladder suprapubically—no other method is sufficient in my opinion—and to keep it draining until the tongue is clear as that of a healthy child. This will take from a few weeks to a few months, or even a year or more in some severe cases; but, in the meantime, we will observe that the patient has taken a general appearance of well-being, the hair and skin have lost their harshness, the eyes are bright, and he is mentally alert. In fact he is restored to about as good condition as is possible to expect or obtain in one of his years, and he is now ready to go through his prostatectomy and has a considerably higher percentage in his favor than if we had gone right ahead and operated without first having relieved his condition of what may be well called a chronic uremia.

What has just been said of the prostatic, applies equally well to any case of surgery. It is my firm belief that we hurry our patients into surgery without due preparation and as a result, we get too many post-operative complications as well as an unnecessarily high mortality; so let us take time to prepare our cases. Probably the surest way of improving our post-operative care is to do better pre-operative preparation. We certainly will escape many complications and, on the whole, will get our patients out of the hospital earlier and with lower mortality rate.

to do with the practice of surgery? I would do with the practice of surgery? I would say that it is one of the very best indices of the patient's metabolic activity, for, when you become accustomed to the various manifestations of this organ, you will be able to run over your hospital cases or office cases and learn at a glance whether they are getting enough liquid, and liquid is the one big thing in carrying on the body metabolism. The diet is relatively unimportant for, in my opinion, it is not so much what we eat, as what we fail to eliminate, that causes many troubles. I do not say that the tongue is better than the laboratory tests, but I am sure that it is of almost equal importance when once you become skilled in its interpretation; and you do not have to wait perhaps twenty-four hours to get a report, you see it right before you and can institute treatment at once, probably averting serious complications that might develop in this twenty-four hours.

We must remember that there are two causes of poor kidney function: First, possible tissue damage to the kidney, which, I am convinced, is true in a relatively small class; second, lack of sufficient fluid to carry on this function properly. This fluid lack, alone, is the cause in probably ninety-five per cent of all cases of poor kidney function.

I realize that I may fail to convey to you my interpretation of the appearance of the tongue. It is something that we must each form for himself, and you may soon become more skilled than I; but I shall feel well repaid if I have awakened in you the thought and willingness to be called old-fashioned enough to learn how to read this barometer and thus perhaps avert severe crises that are lurking in the offing, for your patients.

DISCUSSION

DR. CRUM EPLER. Pueblo, Colo. (opening): I am glad to know that Dr. Fowler i sone of the old school. However, I do not feel that he intended to make it appear that the modern physician is not cognizant of certain evidences of which he spoke as symptoms. Of coure, if there is time, a surgeon should always condition his patient before surgical procedure is instituted. I do not feel that it is an emergency, in any case, simply because some other doctor may get the case away from you and you have to operate before some one else gets it. I do not feel that is an emergency—that is an operation of election. Barring the emergency, the surgeon who does not utilize every effort to condition his patients sufficently well that he may do an operation, is derelict in his duties as much as if his technique were at fault.

In these particular cases where the tongue is the index, they are mostly uremic—they are uremic because the kidney is not putting out the amount of urine it should. The kidneys cannot function. The same thing may be true in certain types of ascites.

To properly prepare these patients, so that they are as reasonably safe operative risks as you can make them, takes time. As far as a supra-pubic drainage is concerned, it is not a serious operation. In these cases, you must water them.

In my surgical work, it is not uniformly the rue. Where the case is a semi-emergent one, I will give fluids subdermally or into the veins. You can give enough fluids to relieve, not in six or eight hours, but in the course of time, and the condition will improve, as Dr. Fowler has so nicely explained. The thing to do is to prepare your patients. There are very few of these cases that belong in the really emergent class.

DR. G. V. BRINDLEY, Temple, Texas: I think Dr. oFwler has a paper that is full of facts. He emphasized the importance of observing a patient. Observation is one of the most important points we must learn. The doctor who depends upon laboratory data alone, will never be successful. You may have an x-ray report of ulcer of the stomach, yet that may not be what is wrong with your patient.

The point about the thickened tongue, that Dr. Fowler brought out, is absolutely right. It usually means the lack of elimination and also a toxemia, but, of course, you may get it in a number of other conditions. I enjoyed the paper very much.

DR. FOWLER (closing: Thank you very much for the discussion. The point was brought out that this applies equally to the physician as to the surgeon. We are putting surgery upon a high pedestal and giving it undue importance today. The surgical stage has reached its height, in my opinion, and we must work to improve general conditions.

Do you know you can cure typhoid without a degree of temperature. with fluids? I have seen it done and have oftentimes wished I was practicing medicine instead of surgery, so as to show how a large amount of luid will affect temperature.

This case will illustrate what I mean. A man went through the world war without injury, but, on his return from "over there," was shot by his loving wife. The bullet lodged in the pleura, and was free in the pleura cavity. The man suddenly became so valuable to her she refused to allow the surgeon to operate. That was in 1918, and, when I was called in I advised what I called an enema clamp. The man was running temperature of 103 to 104½ degrees. I thought I would see what we could do to control the temperature by fluids. If I remember correctly, 24 pints was the most I could give him, yet, by this, the temperature could be kept normal for three days at a time, and if I stopped the fluids his temperature would go up to 103 or 104 degrees. It is very important to apply fluids in case of temperature. I do not know of anything that I have done in my practice that is so interesting and so instructive as the administration of large quantities of fluids. I have found out that, in order to keep myself well, I should drink fifteen glasses of fluids a day, and I do it every day. If I should cut it down, in two days I could give myself an attack —in forty-eight hours. Every person weighing around one hundred and eighty pounds should drink fifteen glasses of liquids a day. With weight of one hundred fifteen or one hundred twenty, I should say the amount of fluids should be about nine or ten glasses. Some of this, of course, should be fruit acids, such as oranges, limes, etc. The matter of giving too much water to a patient is just an impossibility, according to my observation.

I think we will make fewer mistakes if we take a case that has been sick twenty-four to seventy-two hours, and hold him a few hours longer; you cannot make a mistake by holding him a little longer; you will lose fewer patients if you take additional time. This is an extremely interesting subject and one in which we can practice right at home, as well as in the hospitals.

IS A TENDER PALPABLE KIDNEY THE DAMAGED ONE?

(Cabot's Case No. 13215, Boston M. & S. Jour., May 26, 1927.)

Below will be found the discussions of this case, as presented by a selected team from the Maricopa County Medical Society (Phoenix) on Oct. 1, and by Group I of the Yavapai County Medical Society and Officers of U. S. Veterans Hospital at Whipple (Ariz.) on Sept. 28th. The case record was published in our September issue (q.v.).

Yuma County Medical Society

On October 9th, the Yuma County Medical Society discussed this case and have submitted their individual diagnostic conclusions as follows:

Dr. Ketcherside:—Hydronephrosis of right kidney; myocarditis.

Dr. Siberts:—Appendicitis with Abscess.

Dr. Cain:—Myocarditis and malignant tumor of right kidney.

Dr. Knotts:—Myocarditis and malignant tumor of right kidney.

Dr. Shields:—Hypernephroma of right kidney.

Dr. Reese:—Pyonephrosis with one large calculus in pelvis of right kidney; myocarditis.

Discussions by Maricopa County Medical Society

DR. ORVILLE HARRY BROWN
DR. CHARLES S. VIVIAN

(Dr. Brown)

The possibly significant points in this record are as follows: An obese white female, age 61, eighteen months before death had a fall and "heard" a snapping in her back and the next day had hematuria. Hematuria recurred at intervals and there was pain in the right side which was periodic and had a tendency to radiate up to the shoulder and downward into the hip. For a time she had frequent urination at night. Urine was "hard and sudsy." She tired and fainted easily. She had marked dyspnea on exertion. She was subject to colds and sore throats and had a "smothering sensation" in the abdomen.

The examination revealed that she weighed 165 pounds. She was dyspneic lying flat and was pale and cyanotic. Pyorrhea was extensive and there were many carious teeth. Heart rhythm was irregular and frequent (120)—and sounds were of poor quality. There was tenderness in the right costovertebral area and a suspicious mass in the right flank. The pupils were sluggish and the knee jerks were not obtained. Leucorrhea existed and there was retroversion

with cervical laceration. The urine contained albumin and blood. She had moderate fever.

In the hospital she complained of pain in the right flank, and was low spirited, exhausted and apprehensive. The day after pyelography she awakened dyspneic, thinking she was dying, with pulse 160 and respiration 48. She died inside of an hour, the second hospital day.

The outstanding points in the record are: sudden death; aggravated dyspnea; periodic or constant hematuria; suspicious mass in right flank; pain in right flank; fever; frequent pulse; right costovertebral tenderness; cyanosis; obesity. A correct diagnosis on the facts presented must be but little more than a lucky guess. The record is inadequate. We do not know how long she had been having fever and dyspnea. It is not stated what her previous weight had been or what was her height. There are no details of her fainting attacks. Presumably her bowels and digestion were good. Nothing is said as to her diet. There is no report on acetone or diacetic acid. No mention is made of the state of her arteries.

The hematuria and the costovertebral tenderness suggest kidney or ureter pathology. The fever may mean much or little and the statements in the records are not helpful. The dyspnea, cyanoses and sudden death suggest cardiac or cerebral involvement.

Cyanosis may arise from lack of aeration of the blood in the lungs, cardiac embarrassment and toxemia. Dyspnea results from pulmonary obstruction, cardiac embarrass ment, medula lesions, uremia and acidosis. Sudden death may be caused by cardiac infarcts, cardiac or aneurysm rupture, intracardiac ball thrombus, infarct or hemorrhage into the medulla, poison, severe hemorrhage, etc.

There is evidence that there was no profuse hemorrhage and no pulmonary lesions. The urine reports give no suspicion of nephritis or uremia.

She had fever which indicates that she was toxic and this may explain the cyanosis. She was obese and hence we may assume a fatty acid acidosis. The cardiac irregularity and the frequent pulse may be accounted for by fatty deposits about the heart and a myocardial degeneration.

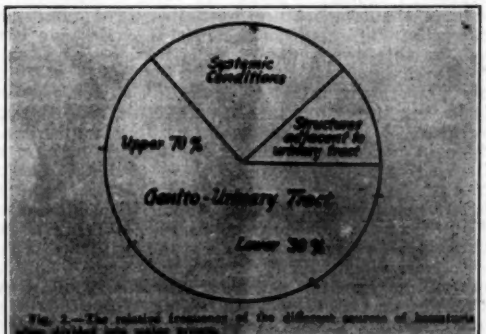
The dyspnea may be explained by a combination of acidosis and cardiac embarrassment secondary to fatty changes. There is also the suspicion that the nourishment of the medulla may have been inadequate. This would be expected especially since the pulse was as low as 90 in the hospital and she was dyspneic lying flat.

The hematuria extending over a period of 18 months points definitely to abnormality of the urinary tract. The suspected mass and the pain in the right flank might or might not have been connected with urinary tract abnormality. They might have been coexistent. We think of ovarian tumor, cecal cancer and adhesions, omental masses, appendix mass, intestinal diverticulum, bladder diverticulum, fecal masses, salpingitis, broad ligament tumor, bladder cancer, etc., to explain the mass and pain. A malignancy would have likely caused marked loss of weight and could account for the pallor.

The pallor, sluggish pupil reactions and absent patellar reflexes suggest chronic lues. The fainting mentioned in the history suggests the possibility of epilepsy. The pallor is suggestive of anemia. In most hospitals the internes pounce upon all cases of anemia with a great deal of glee and have detail studies of the blood. Since this is not reported we may argue that anemia is not likely a serious part of the picture.

(Dr. Charles S. Vivian)

The presenting symptom in this case being hematuria, it is advisable first to survey the relative frequency of the different sources of this condition. Eisendrath has shown (Fig. 1) that five-eighths of the cases of hematuria studied by him have their origin in the genito-urinary tract, while one-fourth are due to systemic conditions, and the remaining one-eighth arise from the structures adjacent to the urinary tract.



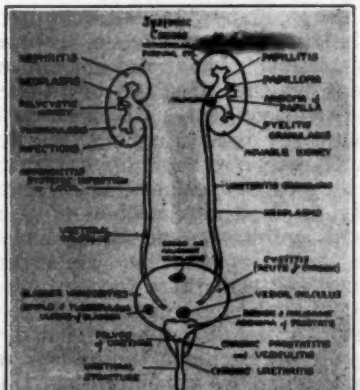
(Fig. 1)

The history of the case under discussion leaves much to be desired and in order to make it resemble a Sam Lloyd puzzle more closely the result of the cystoscopic examination is withheld. Because the cystoscopic findings are not given and because there is a questionable mass in the region of the right kidney, we may presume that the le-

sion is at that point. On the other hand the cystoscopic findings may have been negative upon which hypothesis we must consider the lesions outside the genito-urinary tract.

Of the systemic conditions which can cause hematuria, malaria, scurvy, purpura, hemophilia, syphilis and leukemia must be considered. There is nothing in the history nor physical examination to support the diagnosis of any of these conditions and we must therefore allow them to remain as possible causes. Any of them may be fatal.

Of the causes of hematuria remote from the genito-urinary tract, we must consider a variety of things. The pelvic examination being essentially negative, we may eliminate the pelvic contents as a source of the bleeding. We have, however, a history very suggestive of cardiac failure. This is well supported by the physical examination which discloses dyspnea not of renal origin, cyanosis, an irregular, rapid heart and a low blood pressure, culminating in what may well have been a cardiac death. Blood examination not having been recorded, we are again prevented from being positive and must assume that her cardiac symptoms were not due to anemia. She has not bled sufficiently to cause an anemia but her heart is said to be not enlarged; I question this finding. Assuming it to be correct, however, and assuming that the editor considers us too ignorant to look beyond the genito-urinary tract, and again reinforced by his reticence in disclosing the cystoscopic findings, we must examine the genito-urinary tract, not in the proper fashion but on paper. May I then presume upon your time to enumerate the causes of hematuria as they occur in the genito-urinary tract, from above downward (See Fig. 2). They are: nephritis, neoplasm, polycystic kidney, tuberculosis, other renal infection, papillitis, papilloma of the renal pelvis, angioma of papilla, pyelitis, granularis nephroptosis, stone, ureteritis granularis, neoplasms of ureter, cystitis, acute and chronic, benign and malignant neoplasm of the bladder vesicle, calculi, bladder varicosities, simple and tuberculous ulcer of the bladder, tumors, benign and malignant, adenoma of the prostate, polyps of the urethra, chronic prostatis and vesiculitis, chronic urethritis and urethral stricture.



(Fig. 2)

Her sex rules out the prostate and the vesicles. Now since we have hematuria plus a tumor mass in the right kidney region, we may rule out those conditions which do not cause tumor, namely nephritis. Any of the others may be responsible for a questionable mass in the kidney region.

None of these conditions except neoplasms of the kidney are fatal, except by hemorrhage which, in her case, was not sufficient to cause death. We may guess then, excluding everything but the genito-urinary tract that she died of a renal neoplasm. Since the commonest renal neoplasm is hypernephroma, we are sold on this diagnosis as a questionable second. May I say here that had this patient been referred to me for examination, I would have deferred cystoscopy until her heart condition had been clarified and I would have insisted upon a blood picture certiorem facere.

I will therefore guess:

First: A decompensated heart and infarct in the kidney.

Second: A renal neoplasm most likely a hypernephroma.

SUMMARY AND CONCLUSIONS

(Dr. Brown)

Were hypernephroma present in this case and the sole cause of death, there must certainly have been metastases which should have been discovered, in the lungs, liver or elsewhere.

Cardio-vascular disease would seem to be a more probable cause of death than hypernephroma. Dyspnea is mentioned prominently in the history and without referring to any specific time of origin. Therefore, we may assume that it likely had been present a considerable period. As suggested by Dr. Vivian we may well doubt the finding of a normal size heart. In an obese woman the size of the heart is not easy to outline accurately. It is unlikely that the heart was entirely decompensated. Also if the dyspnea had persisted for a considerable period it is unlikely that the dyspnea was entirely from starvation of the medulla although this is very difficult to rule out. No mention is made of edema. In an obese woman, how-

ever, this may have escaped detection. We can scarcely conceive that the heart could have been the cause of the dyspnea without there having been at least some edema.

We believe that the probable explanation of a major part of the symptoms of which the woman complained and died lay with the cardio-vascular system and that the cause of death may well have been a cardiac infarct from a coronary thrombosis. The great frequency of the pulse together with the woman's apprehension on the morning of her death may have come from the gradual formation of the thrombus.

Yavapai County Medical Society and Officers of U. S. Veterans' Hospital, Whipple, Arizona

DR. GAIL D. ALLEE, Whipple, Arizona
DR. C. E. YOUNT, Prescott

(Dr. Allee)

You will note in the reading of the history that hematuria is the presenting symptom. There is also record of a questionable tumor in the right flank. The patient attributed this hematuria to a fall, when she heard and felt something snap in her back. Next day she had this hematuria. I wonder if she knew what she was talking about? There are cases on record of brittle blood vessels in connection with the kidney, for example, arteriosclerosis, stone, metastatic growths in connection with the adrenals, in which a fall such as she had has ruptured a blood vessel and has caused perirenal hematoma and thus hematuria, and after existing a certain length of time has become infected and led to such a death as described. If death had occurred within a few weeks of the time the first hematuria was noticed, it might seem a possibility, but when we take into consideration the length of time in which she had many, or at least several, gross hemorrhages from the urinary tract, it certainly seems that that diagnosis would be very far fetched. It does seem, however, if we back-track this red trail of urine, we might arrive at the location of the trouble and might even name the cause of it. If we start at the lower end of the urinary tract, the urethra, we would think of new growths, urethritis or stone, but that would be easily diagnosed, following the findings of a physical examination. I don't think the trouble could have been in the bladder,—varices, stone, tuberculosis, new growths, or cystitis. All of these would cause bladder symptoms, and it is very unlikely the bladder would remain silent without having frequency, tenesmus and considerable pain. I don't think the trouble could have been in the bladder. The same could be said of the ureters as has been said of the urethra and bladder. The ureter is not a very large tube, and new growth, stone, or tuberculosis would cause symptoms of obstruction. That leaves nothing further to consider in the urinary tract except the kidneys. No doubt the blood did come from the kidney. The diseases and pathological conditions that can cause blood in the urine, both microscopic and gross blood, are almost legion. Of the general diseases we should mention malaria,—but there is no history suggestive of this disease; that is also true so far as typhoid, typhus, etc., are concerned. There are three diseases of the nervous system that sometimes cause hematuria. They are multiple neuritis, tabes and hysteria. There is nothing in the history to support a diagnosis of either of these. The only thing that hints at symptoms of a nervous disorder is the absence of knee jerks, which they were not able to obtain even after reinforcement. But when we consider that this woman, at the time knee jerks were absent, was within twenty-four hours of death, with a history of extreme prostration, it is a much more reasonable explanation of the loss of knee jerks to lay it on to her dying condition, than any organic trouble with the nervous system. Other diseases to be considered are the hemorrhagic diseases, such as hemophilia, which is ruled out by her sex; scurvy, purpura and others, but there is nothing in the history to indicate these. Then there are syphilis and tuberculosis. In syphilis we should have had some sign of the disease in another portion of the body; we also have no evidence of arteriosclerosis, in fact the history speaks of pulse and arteries as normal, which seems to rule out any syphilitic condition. Against tuberculosis the argument would me somewhat similar; we should have evidence of tuberculosis some place else in the body, probably involving the bladder, with a great many bladder symptoms. It seems impossible that she could have had tuberculosis involvement and not lose weight or present evidence of sepsis or intoxication. There are various drugs which cause hematuria, but there is nothing in the history to indicate that she was taking any drug like cantharides or turpentine. Duke mentions the fact that food intoxications have caused abdominal symptoms and there have even been laparotomies done in which nothing was found, and that these food intoxications were accompanied by hematuria. That would be a very far fetched diagnosis and would not explain the probable tumor this woman had. Now when we consider that this woman showed evidence of great prostration, that she had a feeling in the epigastrium,

of exhaustion and choking and fainted easily, we must confess that the blood diseases, the anemias and leukemias would make a very attractive diagnosis, and would explain very nicely the symptoms this woman had, —the terminal fever and the rather rapid death,—but they do not explain the probable tumor. If the tumor were on the left side we might associate it with the spleen, but being on the right side, it seems to be something else than an enlarged spleen. And, in addition, we have no mention of a blood picture. I do not think we are justified in any way tying her trouble and death to any of the primary blood diseases. Nephritis is often a cause of hematuria, especially chronic nephritis, but that in our case should be ruled out because there is no arteriosclerosis, no high blood pressure and no hypertrophy of the heart. Stone in the kidney is one of the most frequent causes of hematuria. In this case we have very little evidence of pyelitis. We have no evidence of obstruction. The stone should not have caused her death without obstruction or without pyelitis, or without abscess, and it should not, or could not, cause the tumor that she presumably had. Varices can cause hemorrhage, but they should not cause death and could not cause tumor. In connection with gross hematuria, we should always think of polycystic kidneys. Cystic kidneys always travel in pairs and this woman only had the one tumor on the right side. Cystic kidneys cause death because of lack of enough normal kidney tissue to carry on and we should have had evidence of arteriosclerosis, high blood pressure, enlarged heart and uremic symptoms which we do not have. I think the question should be asked, whether it is possible in this history to find evidence of any other diseased organ that could secondarily affect the kidney. There is no other organ mentioned in the history except that there is an abnormal discharge from the uterus, which is not spoken of as a bloody discharge, but merely as a discharge from the uterus. That is abnormal in a woman of her age, but there is nothing to indicate the presence of carcinoma which, by its secondary effects, due to metastases, might affect the kidney. It is much more likely that if carcinoma really exists, that it is not in the uterus, and that the pressure on the blood vessels supplying the uterus is probably the explanation of the uterine discharge. Everything else having been considered, we come to the most probable cause of hematuria in people of her age, and that is tumor of the kidney. Tumors may be benign or malignant. Benign tumors seldom grow to such a size that they can be felt, especially in an obese woman such as this patient seems to have been. Also they are not so apt as the malignant ones to cause hemorrhages, although they can and do, but it is rather difficult to see how a benign tumor could have caused her death with as little hemorrhage as she seems to have had. It is much more probable that if she had a tumor of the kidney, and we think that she did, that it was one of the malignant type,—carcinoma, sarcoma, or hypernephroma. Hypernephroma, on account of being much more frequent than the other two, is our choice of the character of tumor which caused this woman's death. The hypernephroma would explain her symptoms very well; it would explain the tumor mass which is presumably in the right flank; it would explain the probable anemia that she had, and, more than that, it would explain better than anything else a condition that could last for one year and a half and still not cause emaciation. This woman died with all her flesh, according to this history.

I am authorized by our group to make that diagnosis, hypernephroma, as the cause of this woman's death. My colleague, Dr. Yount, will follow with a detailed discussion of hypernephroma and will demonstrate that our diagnosis is a reasonable one and that our conclusions are justified by the history and findings in this case.

(Dr. Yount)

We have tried to make a proper evaluation of the symptoms given in the history, and I will now set forth our reasons for making a diagnosis of hypernephroma in this case.

As far as the patient was concerned, she had a distinct recollection, following a fall, of a snapping in the neck, and there existed a frank hematuria. Keyes tells us that there is not very much value in trauma as a cause of renal tumors and he goes on to say that nephritis, suppuration and stone are really only accidental and secondary in renal tumors. Coming to the most important or cardinal symptoms,—hematuria, first noted by the patient following a fall, and recurring throughout the eighteen months which she lived following notice of this hematuria.

We find that such authors as Braasch, Albarran, Block, Young, Davis and Keyes all give hematuria first place in prominence as a symptom of tumor of the kidney. In 1913 Braasch published his classic entitled "Clinical Data on Malignant Tumors of the Kidney" based on a study of 83 tumors of the kidney considered at the Mayo Clinic. Since that time, fifteen years have passed and

that paper still remains a classic. A postulate which he gave us at that time has withstood the test of fifteen years urological progress: "Given a clinical picture of a palpable tumor in the region of the kidney, hemorrhagic urine, persistent pain referred to this region, and the general symptoms of malignancy, the diagnosis of malignant tumor in the majority of cases will be found correct." Albarran found hematuria the first symptom in 50 per cent of cases and during the course of disease in 90 per cent. In a total group these per cents vary anywhere from 36 per cent by Braasch, as first symptom, to 90 or 92 per cent hematuria appearing in kidney tumor cases. Dr. Vivian, who read a paper on hypernephroma in 1925, reviewing data of Smith and Shoemaker, Massachusetts General Hospital, of 62 cases reported, naively remarks, "These very surprising figures (53 per cent hematuria) would lead one to believe that hematuria, which has always been considered one of the cardinal symptoms, is not as frequent as we would suppose." Braasch tells us that hematuria prolonged over a period of several weeks or months, occurring at long intervals, is suggestive of essential hematuria; when it continues but a day or two or reappears at short and irregular intervals, it indicates renal tumor. He is emphatic that every one of these bleedings be traced to its source. He also says it would be conservative to assume every case one of malignancy until the hemorrhage is run down and proved otherwise. Young, speaking along the same lines, says we must determine the cause of hemorrhage regardless of the cost. As to the severity of the hemorrhage; there is no history of it being in this case severe, but it has been so severe as to cause anemia, or to require immediate nephrectomy to stop the bleeding.

The next symptom, and a cardinal one, is the matter of tumor, and here again these urologists differ in their percentage results, but most of them find tumor. Braasch says tumor was palpable in 78 per cent, Young 30 per cent of cases. The latter tells how difficult it is in hypernephroma and similar tumors to outline the kidney, giving the anatomical location as the explanation. Braasch gives five rules to differentiate the kidney in palpation, helpful in diagnosing it from other tumors in this region. It is surprising to note when you cut down on a very small kidney, how large it is when you get there. It is also true that the hypernephroma type causes death by metastases many times before attaining great size, in fore attaining great size by metastases, in sharp contrast to the embryonic type found in children.

Pain is the third cardinal symptom. There is the renal colic type due to some obstruction of drainage of the pelvis, probably blood clot, and there is diffuse pain which sometimes makes it difficult to distinguish which side is involved. There is also fixed or constant pain; but we have pain. According to Young at least one-third of cases have pain, and Braasch puts it very much higher. The pain may simulate other pains, such as lumbago, rheumatism, etc. Young says pain is more frequently noted in the later stages of disease, such as our case, after a year of hematuria.

Now the study of the kidney itself. What does the kidney reveal? And here progress in urology again assists in diagnoses. It would be a diagnostic absurdity for our group to hang the diagnosis of hypernephroma on the findings of one, or five, or even ten cells per high power microscopic field, but you remember the woman noted it herself and that is what brought her to the Massachusetts General Hospital on August 11th. You will note that all attacks were of very short duration, which probably explains why the catheter revealed a full bladder and no impairment of function on August 11th. Kelly tells us that deficiency of function on suspected side points to it being the site of disease, but the contrary is not true if the function is normal, because that kidney may go on secreting until the secreting surface is cut off by the tumor growth. A pyelogram is of very great value. Braasch states this data will identify or exclude renal involvement in a large percentage of cases. Six months before August 11th our patient had x-ray of the genito-urinary tract. What does that mean? Did she have x-ray for stone, for kidney or what? Whatever she had the result was negative, and we are not able to use it in our evaluation. However, we do know that on the 12th she had a cystoscopic examination and pyelogram made. We have not that report but we are of the opinion that the radiologist and urologist were able to make a diagnosis. The patient was relieved by catheterization of ureter, probably by the relief of congestion.

You will recall from your anatomy, that in the male the right spermatic vein opens into the inferior ven cava at an acute angle, and the left into the renal vein at a right angle. In the female the ovarian veins correspond to these and enter in the same way, yet in a review of post mortem findings I fail to find one reference to varices of the ovarian vein comparable to the common symptom of varicocele associated with hypernephroma in the male. Circulatory disturbances are frequent, particularly in hy-

pernephroma. Braasch goes so far as to advance the theory that toxins absorbed from the tumor may have vasomotor dilating effect seen in the face, bladder, scrotum and hemorrhoids. We add to that the mechanical effect in our case, the irregular heart; she had rapid heart, cyanosed lips and mucous membranes, tired easily, had dyspnea and epigastric smothering sensations, due probably to metastases. Kelly points out that plugs are frequently found in association with hypernephroma, and uses one of Max Brodel's drawings to illustrate the method of removing plugs in renal vein thus curing the patient by their removal. These emboli are sometimes found extending up the inferior vena cava even to the heart.

Our patient was 61 years old; we find in the decade of 50 to 60 twice as many hypernephromata as in any other. Our group worried quite a little because our patient did not lose weight. We find in the British Journal of Dermatology a case reported of hypernephroma with obesity. Cachexia is not mentioned. Young and Davis do not mention it in their symptoms except as it is covered by loss of weight. Patient's skin was pale, we have no blood picture to check against this. Kelly states that pure cancer cases are apt to show cachexia early, hypernephroma late.

Temperature: Israel states that in 145 cases fever was noted in 8 per cent in end stages. Some had it early.

Summarizing: 80 per cent malignancies of kidney in this decade, 5th and 6th, are hypernephroma. Our diagnosis of this case is hypernephroma right kidney, with metastases.

Discussion by Massachusetts General Hospital

Edward L. Young, Jr., M. D.

This is the picture of a woman well advanced in years, with the story of hematuria for a year and a half, starting abruptly, continuing up to the time of admission, with cardiovascular damage and negative X-rays so far as the urinary tract is concerned. The onset of that hematuria might actually have been connected with the fall, although bleeding usually comes on pretty soon after any jarring if at all. This came on only the next day.

With a negative X-ray we could rule out stones as a cause of this hematuria, because had it been due to a stone so small or so situated that X-ray would not show it bleeding would not have continued up to the present time.

She has enough evidence of cardiac disease to say that that alone is the cause of the hematuria. Of course it is unusual to have hypertension and nephritis cause hematuria to this degree and for this length of time, although I believe it is one of the commonest cause of microscopic hematuria and often of macroscopic hematuria.

The facts that the X-rays are negative and that there is a mass to be felt in the right flank bring up the question of tumor of the kidney. With no more evidence of sepsis than there is in the catheter specimens it seems hard to fit a pyonephrotic kidney into the picture. It seems to me that the pyelogram will very probably show an abnormal kidney, probably from tumor.

PRELIMINARY DIAGNOSIS

Hypernephroma.

CYSTOSCOPY

Cystoscopy was done for the purpose of confirming a diagnosis of hypernephroma, but after inspection of the bladder, which was normal, and catheterization of the ureters, the flow of urine was so poor from both sides and the patient was in such poor condition that it was thought advisable to discontinue the operation.

PYELOGRAM

The left kidney shadow was large. The right kidney shadow was obscured by gas and motion. There were no X-ray shadows of urinary calculi. A right pyelogram revealed normal calices, renal pelvis and ureter. There were extreme proliferative changes about the lumbar spine and pelvic joints with eburnation of the left hip joint.

FURTHER DISCUSSION

Dr. Richard Dresser: The plain films of the kidney were negative. We have here the flim of the injected pelvis. That pelvis is just a little large, but I believe it is within normal limits. I was trying to find the kidney outline on that side. It does not show up very clearly. We can imagine a line which might be the kidney, but it is not definite.

Dr. E. G. Crabtree: Is that lower calyx right?

Dr. Dresser: I think it is all right. I think that the apparent deformity is due to the position in which we are looking at the kidney.

Dr. Young: The fact that we do not see the outline of the kidney on that side is often important, assuming we are satisfied that we have a good x-ray.

Dr. Dresser: I think it is important.

Dr. Young. On the other hand, that is a distressingly normal pelvis.

Dr. Crabtree: That does not rule out the possibility of cystadenoma.

Dr. Young: We have no cause for bleeding from the bladder, according to the cystoscopy, and the pyelogram does not give us any definite diagnosis. We did not have any x-rays of the chest. Was there any question of metastasis?

Dr. Dresser: No.

Dr. Young. I think I will let Dr. Richardson give us the diagnosis. It still seems to me that kidney tumor of some type is the best bet. Of course it is conceivable that her cardiorenal system was badly damaged, that her pressure before this has been higher, that there is a certain amount of nephritis, and that this is an unusually prolonged case of bleeding from cardiorenal disease.

Dr. Cabot: Do you suppose she could have had a kidney infarct? That would give bleeding. She had a poor heart.

Dr. Crabtree: Could it be an infarct for a year and a half?

Dr. Cabot: I did not notice that it had been going on so long.

Dr. Young: I have never known gross blood from cardiorenal disease, proved as such, to last over six months. I saw one case with Dr. Hugh Cabot that did last nearly as long.

Dr. Cabot: There is generally a high blood pressure with that.

Dr. Young: Yes.

Dr. Cabot: Do you think the pyelogram did her any harm?

Dr. Young: No. Properly done I do not think a pyelogram **per se** does anybody any harm. I do not think that the injection of the solutions now used, if carefully done, does any harm unless the kidneys are badly damaged; in that case to do a double pyelogram might be a very considerable risk, by hitting the kidneys when they were just on the edge of suppression.

I have no guess except kidney tumor.

A Physician: How do you explain the pulse of 160?

Dr. Young: She died within an hour. We shall have to ask the pathologist to tell us. I do not explain it.

CLINICAL DIAGNOSIS (From Hospital Record)
Neoplasm (?) of the left kidney.
Myocarditis.
Pulmonary embolus.

DR. EDWARD L. YOUNG'S DIAGNOSIS
Kidney tumor.

ANATOMIC DIAGNOSES

1. **Primary fatal lesions.**
Adenocarcinoma (hypernephroma of left kidney.
Metastases in lungs and liver.
2. **Secondary or terminal lesions**
Pulmonary embolism.
Hypertrophy of the spleen.
Arteriosclerosis.
Hypertrophy and dilatation of the heart.
3. **Historical landmarks**
Chronic pleuritis.

Dr. Richardson: The head was not examined. The abdomen was not distended, and the wall was negative. The skin showed a tan-like color, but no definite icterus. The muscles were negative. Subcutaneous fat in large amount. Breasts negative.

The peritoneal cavity and appendix were negative. The mesenteric glands were slightly enlarged and surrounded by an areola of gelatinous tissue. A piece was taken for microscopic examination. It showed no neoplasm. The retroperitoneal glands also were rather firm. A piece taken from them was negative for neoplasm.

The liver was six centimeters below the costal border. The diaphragm was at the fourth rib on the right and the fifth rib on the left.

There was no excess of fluid in the pleural cavities. There were a few old adhesions on the right, on the left none except adhesions from neoplastic nodules scattered in the pleura. These extended into the lung tissue. This condition was present on the right side.

The trachea and bronchi contained some pale mucous material, but were otherwise negative. The bronchial glands were frankly negative.

We have already mentioned the neoplasm in the lungs. The lung tissue itself was rather pale, spongy, no areas of consolidation, and showed scattered through it rather firm nodules of varying size up to 3.5 centimeters in diameter of malignant tissue which was gray-white, homogenous, firm to slightly gristly.

The pericardium was negative. The heart weighed 422 grams,—moderately enlarged,—with negative myocardium, valves and coronary arteries. The coronaries showed considerable fibrous sclerosis scattered along them in places, but this produced no definite decrease in their circumferences. The aorta showed fibrous sclerosis, with scattered areas of fibrocalcareous change. There was a slight amount of fibrous sclerosis in the great branches. All told, a slight to moderate amount of arteriosclerosis, with some hypertrophy and dilatation of the heart.

On the death report that came down here the surgeons made the diagnosis of pulmonary embolism. The pulmonary artery at its bifurcation was occluded by a large frank branching embolic mass which was prolonged down each primary bronchus and into some of the great branches in the lung tissue. The pulmonary veins and venae cavae were frankly negative and the renal veins were free, as were the other great radicles of the inferior cava.

The liver weighed 1915 grams. The surface was smooth, the tissue of good consistence, rather pale. In the region of the anterior surface of the upper part of the left lobe near its junction with the right there was a small mass of neoplasm similar to the malignant tissue which we have described. It was about 12 millimeters in diameter.

The gall-bladder conained twenty-four stones. They were about six millimeters in diameter. But the bladder mucosa was negative and the bile-duc's free and negative. The pancreas and the duct of Wirsung were negative. The spleen weighed 315 grams; moderately enlarged. The tissue was brownred, rather mushy, but showed no definite lesion. The adrenals were frankly negative.

The right kidney weighed 174 grams. The capsule came off easily, leaving a good surface. The cortex was six millimeters. The kidney tissue generally was in good condition. The pelvis and ureter were negative. The left kidney including the tumor involving it, weighed 325 grams. The kidney tissue was practically replaced by a mass of malignant tissue. This tissue extended from the surface inward for several centimeters and resembled the typical tissue of the so-called hypernephroma, but its lower border was sharply marked off from neoplastic tissue which was pale, elastic, and like that in the lungs. This extended to the region of the pelvic wall. The pelvis showed no definite dilatation. The ureter was frankly negative. In two places on the pelvic mucosa there were very small plaques of malignant tissue.

The bladder, uterus and adnexa were negative.

Sections from the tumor tissue in various places showed adenocarcinoma of the kidney, hypernephroma, and showed that there were no metastases in the lymph glands. No particular source was found for the pulmonary embolus unless it came from the left renal veins.

Dr. Young: That was the left kidney. I think it is another instance of the will to believe. There was a little tenderness in the kidney doing all the work, and it was thought because of that and a little spasm that everything was on that side.

Dr. Crabtree: The other thing was of course that they did not have a chance to investigate. If they had had functions they certainly would not have injected the wrong kidney.

Dr. Young: It is an instance of how one can go wrong on insufficient evidence.

Dr. Richardson: The clinical diagnosis on the death report was, "Question of neoplasm in the left kidney."

Dr. Young: They injected the right. This was taken from the record. Is there any record about cyanosis when she was dying?

Miss Painter: Cyanosis is not mentioned.

A Physician: Did she die from the hemorrhage in the lung?

Dr. Young: From the embolus in the lung, yes.

DIAGNOSTIC OPEN FORUM

Based on the Cabot Case Histories selected and studied by the Yavapai County Medical Society and the Medical Officers of U. S. Veterans Hospital at Whipple, Arizona.

Any medical society or hospital staff in the southwest is invited to discuss these cases and submit their discussions or diagnostic conclusions for publication in this journal, along with those of the Yavapai County group.

Cases for October 30th

Group II. Case 1.

A zoologist twenty-six years old entered September 12, 1897.

September 7 he sailed from Jamaica after a ten weeks' stay. He was unaccustomed to the hot climate and had been more or less run down during the summer and had slept poorly. The day after he sailed he had frontal pain in the head and pain in the back and legs, apparently a high fever, and then profuse perspiration, but no chill. His pulse was 140. The next day he felt better, but had nausea and considerable perspiration all day. He had taken thirty to forty grains of quinine daily since September 8. His ears were still ringing. September 10 to 12 he was better, although he had some nausea and vomiting nearly every day. He had several loose movements daily and considerable gas. His appetite had been poor. He had had no fever since September 8.

His father died of consumption.

He had had the diseases of childhood, including scarlet fever. He had had malaria (?) five years before admission and malarial fever for one day last July. He had occasional headaches. He usually took no alcohol.

Clinical examination showed a well nourished man who seemed somewhat dazed and quite deaf. The upper part of the chest front and back was thickly spread with hyperemic papules, some of them surmounted by vesicles which looked somewhat cloudy. There were a few papules over the abdomen. Some gurgling was heard throughout. The splenic dullness was one inch above the costal border. There was no tenderness.

Amount of urine not recorded, urine dark, specifc gravity 1.016, a large trace of albumin, bile present, a few leukocytes, granular and hyalin casts, some with fat adherent, a few cells on casts, little free fat, rarely an abnormal blood corpuscle. Blood: 7,800 leukocytes, hemoglobin 92 per cent, no malaria parasites at two examinations. Serum reaction not obtained.

On entrance temperature was 103, pulse 70 and respiration 20. Forenoon of the 13th, temperature was 98.6, pulse 86, respiration, 20. In afternoon shortly before death, temperature was 102, pulse 60 and respiration 52.

The night after admission the patient vomited once. There was slight cyanosis. At seven o'clock the next morning he said he had not felt so well in months, had no ringing in the ears and no pain anywhere. An hour later, however, after answering one or two questions he could scarcely be roused. The skin and sclera now showed jaundice. This had followed a fall in temperature to normal. Two hours later he could not be roused at all and was more cyanosed. There were clonic contractions of the jaw muscles. He was unable to swallow. The arms and legs were somewhat stiffened. The condition grew steadily worse. There was fibrillary tremor of the chest muscles. The pupils later were contracted and did not react. The liver dullness, which the previous night semmed to extend to the costal border, was now from the fourth to the seventh rib. Late in the afternoon there was Cheyne-Stokes respiration. Strychina had no effect. He continued to have vomiting and diarrhea. One movement contained a little blood. During the day there were some blood streaks in the vomitus, perhaps from the throat. The tongue was ecchoymosed where blood had been taken for examination. In the course of the day the jaundice became more marked. A friend reported that the patient was not yellow September 12, although his urine was very high colored. The liver was at the costal border. The spleen was not much enlarged.

The cyanosis became more marked. The afternoon of September 13 the patient died. Almost immediately after death the head drew back and muscular rigidity set in.

Group III. Case 2.

A girl baby seventeen months old entered March 20. The complaints were abdominal distention and listlessness.

Six months before admission the mother was called home from work because the child appeared dull and did not play well. She found the child's abdomen was distended. The child was put in a hospital for three weeks without relief. On returning home she gradually improved and the distention became less. Four weeks before admission she again became listless and had loss of appetite and occasional vomiting. Once she became stiff and was thought to have a convulsion. She had also rubbed her head as if it ached. For two nights before admission she slept very poorly.

The child was well until the present illness. She had had only one or two colds and never any cough. When a few months old she had a brownish sticky discharge from both ears.

A maternal uncle died of tuberculosis. A paternal aunt had intestinal tuberculosis. The child had never been in contact with either. Her mother worked out at times, leaving the baby to be cared for by a woman who came to the house.

Clinical examination showed a poorly developed and nourished, pale and apprehensive baby with a noxious odor. The head showed a suggestion of prominent bosses. Ear drums normal. White plaque one centimeter in diameter on the right buccal surface. Tonsils large. Flaring ribs. Harrison's groove. Lungs clear. Interscapular dullness. Heart normal. Abdomen markedly protuberant, with prominent viens. Shifting dullness. Distention prevented palpation of liver and spleen. An umbilical sinus discharged brown foul smelling fluid with bubbles. Palpable masses. Vaginitis. Vulva red. Many areas of erythvema half a centimeter in diameter and excoriations on both buttocks. Pupils and knee-jerks normal.

Amount and specific gravity of urine not recorded. Findings normal. Blood: 11,600 leukocytes, 68 per cent. polymorphonuclears, 50 per cent. hemoglobin, reds 3.520.000. Wassermann negative. Tuberculin, human and bovine 1/1000, negative. Smear of fluid from umbilical sinus showed few cells but many organisms, bacillus coli and Gram-positive cocci predominating; culture, no growth. Stools: fats and some starch in one of two specimens.

X-ray of the abdomen showed no abnormality. The supracardiac area was not increased in width. The heart shadow was unusually wide, perhaps because the plate was taken at inspiration and the diaphragms were high. An examination with barium showed the stomach empty after six hours. The pyloric area appeared slightly narrowed but as far as could be determined was normal. Considerable barium was scattered through the colon as far as the descending portion. After twenty-four hours the

head of the barium column was shown at the mid descending colon.

Temperature 98.4° to 102°, rectal, until March 29, then 98° to 99.5° for two days, then 98.4° to 101.1° with a terminal riset to 103°. Pulse 120 to 97. Respirations 30 to 71.

March 22 edema of the feet developed. A surgical consultant made a diagnosis of persistent Meckel's diverticulum, perhaps with associated partial intestinal obstruction. He thought operation was indicated, but dangerous, and advised waiting until the patient was in a better condition. An oculist found the eye grounds difficult to examine but apparently normal.

March 25 the child was given a capsule of carmine. A slight tint of the dye appeared in the discharge from the sinus in twenty hours, and a definite red color the next day. The dye appeared in the stool in not more than twenty-two hours and three quarters after ingeseion.

March 28 there was an edematous area, not red, covering the left ear. It seemed to have started three days earlier in the angle of the jaw, probably in a gland. The throat and the other ear were normal. The temperature was 102. The bases of both lungs showed slightly harsh breath sounds and decreased resonance.

During the next week the child did badly, lost weight and was lethargic. A lumbar puncture was done March 30 gave clear colorless fluid, initial pressure 210 to 220, combined jugular compression 310, after removal of 13 cubic centimeters 120; six cells; globulin slightly increased, Wassermann negative, total protein 21, goldsol 1110000000, sugar 60. Edema of the extremities was quite marked. There was congestion of the bases of the lungs. April 5 the child died.

Cases for November 27th

Group I. Case 1.

An American of seventy-seven entered the hospital December 15 so weak that the history taking was stopped almost at its beginning. The chief complaint was "bronchial asthma."

As long as he could remember he had had "asthma" of the worst sort. The present attack began suddenly three weeks before admission.

Clinical examination showed a pale, emaciated, very senile old man coughing weakly but frequently and occasionally raising a dram of grayish mucopurulent non-tenacious sputum. Lower conjunctivae bordered with mucopurulent secretion. Teeth all missing. The throat showed a few slightly red areas covered with exudate. Spine stiffened. Apex impulse of the heart felt 10 centimeters to the left of the midsternum, coinciding with the left border of dullness 2 centimeters outside the midclavicular line. Supracardiac dullness and right border of dullness not made out. Sounds of poor quality, weak. Pulmonic second sound accentuated. Rythm regular. A soft apical systolic murmur, a questionable basal systolic, no diastolic. Artery walls markedly thickened and tortuous. Blood pressure 90/0. There was a definite reduction in the intensity of sound at 40 millimeters. but definite beats could be heard down to zero. Marked emphysema. Occasional diffuse asthmatic squeaks. Coarse rhonchi throughout, disappearing after cough. No consolidation made out. Diffuse moist rales which tended to disappear after coughing. Breath sounds prolonged and slightly raised in pitch. Whisper diminished throughout. Slight dullness at both bases behind. Tactile fremitus normal or slightly decreased. Expansion limited equally on both sides. Marked apical retraction, more on the right. Slight tenderness in the right upper quadrant. Voluntary spasm prevented satisfactory examination. Cecum enlarged, firm, full of gurgles; not hard or tender. Slight pitting edema of the feet, more on the left. Extremities cold. Eczamatoid macular eruption over both lower legs. Pupils normal. Fundi, especially the left, obscured as to detail by opaque lenses. Kneejerks not obtained without reinforcement.

Amount of urine normal, specific gravity 1.014, a trace of albumin, 10 to 20 leukocytes per field in the single specimen. Blood: 6,200 to 9,300 leukocytes until December 20, polymorphonuclears 89.5 to 85 per cent; hemoglobin 40 to 45 per cent and reds 1,000,000 to 1,500,000 before transfusion, afterwards hemoglobin 50 to 55 per cent, reds 1,828,000 to 1,656,000. Entrance smear: polymorphonuclears multilobed and granular, red cells showed more than normal variation in size and shape; a few large polychromatophilic cells, no true microcytes. Platelets not definitely diminished, varied in size, a few large No marked achromia. Smear December 16; polymorphonuclears old, with many lobes and large granules. Marked poikilocytosis and some anisocytosis, several small reds seen, a few large ones, reds in general smaller than normal, no young forms seen. Platelets slightly decreased, with some variation in size. some large platelets. Reticulocytes 0.3 per cent before transfusion. 0.1 to 8.6 per cent after transfusion. Red cell diameter measurements: median and dispersion both markedly increased Icteric index 15. Wasserman: bile. Non-protein nitrogen 75 to 77 milligrams. Fasting contents of stomach: 170 cubic centimeters of brown liquid with precipitate, no free hydrochlore acid, combined acid 52, guaiac strongly positive. Test meal: 25 cubic centimeters of light brown material with precipitate, free hydrochloric acid 0, combined acid 24, guaiac positive.

Temperature 97.8° to 102.3°, rectal. Pulse 69 to 138. Respiration 24 to 32.

The patient was too weak for study. December 17 he seemed in a moribund coma. There was left facial paralysis, ptosis of the left eye and pulling of the mouth toward the right side. Tracheal rales were audible across the room. 600 cubic centimeters of blood was transfused. There seemed to be slight improvement following the transfusioon. He roused somewhat from coma. Six hours later there was no facial paralysis. He progressed satisfactorily until the night of December 20. Then the rhonchi increased in number and became widespread. The leucoyte count was 4,000. Soon after midnight he died.

Group II. Case 2.

A sixteen-year-old schoolgirl entered March 13.

Five weeks before admission she had a streptococcus sore throat. She had been ailing since that time. Three weeks before admission she had "rheumatism" in her feet. ankles. hip and wrist. March 5 her face began to twitch. March 8 she stopped school. The following day she talked incoherently. March 10 she began to throw her head from side to side. The night of March 11 she was found in her night clothes crouching over the register talking to herself about being chilly. The bed was pulled to pieces and the room torn up generally. The day before admission she began to throw herself about and was unable to talk at all. She had a wild night in spite of chloral. She had not slept for five or six nights.

She had a similar attack at twelve years.

Clinical examination showed a well nourished girl showing marked incoordinate movements of the entire body, requiring forcible restraint to keep her in bed. She did not speak when questioned. Cheeks and mucous membranes flushed. All prominences and convex surfaces of the body showed reddening in the form of discrete and confluent papules, not decolorizing on pressure. Skin dry and harsh. Apex impulse of the heart felt in the fifth space 8 centimeters from midsternum. Action rapid, regular.

Sounds of fair quality. No murmurs. Pulmonic second sound accentuated at the base. Lungs normal. Abdomen held rigid, otherwise normal. No edema. Pupils not examined. Knee-jerks, abdominal reflexes and reflexes at wrist and elbow not obtained. Plantar reflexes normal. No Kernig. Neck not stiff.

Amount of urine not recorded, specific gravity 1,022, slightly alkaline at both of two examinations, cloudy at one, a very slight trace to the slightest possible trace of albumin at both, acetone at one. Blood 19,000 to 14,000 leukocytes, polymorphonuclear leukocytosis, hemoglobin 85 per cent.

The patient was very violent. Her movements were only partly controlled by chloral and occasional doses of morphia. March 18 a short rough high pitched systolic murmur appeared at the apex.

March 19 a lumbar puncture was done and 15 cubic centimeters of fluid withdrawn, part of it very bloody, part nearly clear. It reduced Fehling's solution slightly. Sediment from the clearer tube was mostly blood corpuscles. Of 100 cells 80 per cent, were palymorphonuclears, 20 per cent mononuclears. The number of these cells seemed to be no more than might be expected with the amount of blood present. A culture of the fluid showed no growth.

Temperature 99.9° to 103.7°, with a terminal rise to 108°. Pulse 108 to 160. Respirations 15 to 28.

After the lumbar puncture the temperature rose steadily to 108°. The patient became weaker, the movements subsiding only as her strength failed. Strophanthin was given with no response. A double parotitis developed. The breathing became very shallow. The morning of March 20 the patient died.

PERSONALS AND NEWS

DR. JOHN J. McLOONE, of Phoenix, has returned home after spending the summer in Europe. He visited the principal cities of Great Britain, Ireland, France and Germany. During the latter part of July he attended the International Oto-Laryngological Congress of Copenhagen. The greater part of his time was spent in doing special work in Profession Portmann's Oto-Laryngological Clinics at the University of Bordeaux.

DR. E. PAYNE PALMER, of Phoenix, will return home about October 25th, from a visit of several weeks in the east. He attended the meeting of the College of Surgeons in Boston, as a member the Board of Governors from Arizona, and the conjoined Congress on Surgery including the special week of clinics on fractures given by Dr. Scudder. Following this, he attended the Southwestern Clinical Conference in Atlanta, Ga., whose program presented an unusual array of foreign and American surgical talent.

DR. J. M. PEARSON, of Glendale, Ariz., has returned to that location after spending several years in California. He has purchased property in Glendale and will build a combined residence and office.

DR. F. D. VICKERS, of Deming, N. M., attended the Twenty-sixth Anniversary Pacific Association of Railway Surgeons, the last week in August, returning home in September.

THE U. S. PUBLIC HEALTH SERVICE, thru H. W. Komp, engineer and Dr. M. A. Barber, expert on malaria, have completed their survey of the malaria bearing mosquito in New Mexico. Their work was largely among the Indian tribes where malaria was found to bery prevalent.

DR. P. M. STEED, of Deming, N. M., has been appointed health officer of Luna county, succeeding DR. J. C. MOIR, who recently resigned.

DR. C. H. LAUGHARN, of Clifton, Ariz., has returned from vacation spent on the Pacific Coast, and resumed his work in Greenlee county.

DR. J. E. REDDEN, of Casa Grande, Ariz., is celebrating the arrival of a possible future M. D. in his family, on Sept. 14.

DR. GEO. N. FLEMING, of Las Vegas, N. M., is the republican candidate for state senator from the third senatorial district of that state.

DR. A. C. CARLSON, of Jerome, Ariz., president of the Arizona State Medical Association, is away from his work during the month of October, taking a well earned vacation.

DR. CHARLES S. SMITH, formerly of West Virginia, has located in Nogales, Ariz., where he will practice the specialty of eye, ear, nose and throat. Practititioners of this specialty are not very plentiful in Arizona outside of the cities of Phoenix and Tucson, and Dr. Smith should be a welcome addition to the medical fraternity of the border city.

DR. CHARLES SECHRIST, formerly of St. Louis, has moved to Flagstaff, Ariz., where he will be associated in practice with Dr. A. H. Schermann.

SCHOOL EXAMINATIONS IN MOHAVE COUNTY, ARIZ.: Drs. Toler White, W. C. Todt and Walter Brazee, during the past month, have examined over 300 school children of Mohave County. Of this number, only 27 were found defective, mostly from diseased teeth, tonsils, or improper diet.

VETERANS HOSPITAL IN TUCSON DEDICATED:—On October 13, the new million and a quarter dollar hospital of the Veterans' Bureau was dedicated, and formally turned over to Dr. William D. McFaul, medical officer in charge. All the patients from the Pastime Park institution have been transferred. The new hospital is south of the city and is surrounded by spacious grounds. At the dedication exercises, Governor G. W. P. Hunt and Senator Henry Ashurst were the chief speakers.

NAVAJO COUNTY DEMOCRATIC PLATFORM EMPHASIZES PUBLIC HEALTH:—The Navajo County Democratic platform, adopted on Sept. 28th, has a very commendable clause on public health. With the introductory statement that public health is a social science and not an experiment, it demands that governmental policies shall guard the health of its citizens from birth throughout life.

DR. A. J. WHEELER, physician for the East Farm Sanitarium of the Indian School at Phoenix, is suffering from an attack of malta fever. This was contracted during the summer while on a visit to Luepp Indian School. He states that most of the Indians in that section drink goat milk, and many of them have attacks of illness which he thinks due to malta infection.

DR. ROY THOMAS, of Los Angeles, was a visitor in Phoenix on October 14th, with his parents, Dr. and Mrs. John Wix Thomas.

DR. SAMUEL H. WATSON, of Tucson, returned home on October 14th, from a visit of two months to eastern medical centers. On the 12th, he read a paper before the Heliotherapy Association, in Chicago.

DR. JOHN E. BACON, of Miami, was among the Arizona surgeons who attended the American College of Surgeons in Boston, the middle of October. He also attended the special demonstration clinic of Dr. Scudder on Fractures, held just prior to the College gathering.

DR. J. M. GREER, of Phoenix, who is taking prolonged postgraduate work in New York, attended the College of Surgeons meeting in Boston October 9 to 12, including Dr. Scudder's special class in Fractures.

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DOCTOR HENRY A. HUGHES

With the passing of Doctor Henry A. Hughes, of Phoenix, one of the most colorful and interesting careers among the citizens of Arizona was brought to a close. When Dr. Hughes responded to the toast addressed to the charter members of the Arizont State Medical Association, at the banquet in Tucson, last April, there was little in his appearance to indicate that he would never again appear in a meeting of the Association he helped to organize in 1892.

Dr. H. A. Hughes was born at Elsworth, Ohio, in 1848. He graduated from the Kentucky School of Medicine at Louisville in 1875, and from the Jefferson Medical College in Philadelphia in 1881. After several years practice in Texas, he located in Phoenix in 1886, and for forty-two years he has been prominent in medical and political circles. He was one of the charter members of the old Territorial Medical Association and was its second president, being elected at the meeting of 1893. Not only the leading practitioner of medicine in the early days of Phoenix and the Salt River Valley, he was also one of its chief citizen builders. An uncompromising foe of saloons, gamblers and organized vice, in a day when such opposition was not as popular as it now is, he lived to see gambling, saloons and open vice banished from his city and state, largely through his own influence and efforts.

It was with a subconscious prescience that the opportunity might not present again, that the testimonial to the charter members of the Association, centering around Dr. Hughes, was arranged for the meeting in Tucson in April. We are grateful that the testimonial is on our records, as the memory of the long and useful life of Dr. Hughes will remain graven on our hearts.

REAL VS. MAKESHIFT PUBLIC HEALTH WORK.

At the last annual meeting of the Arizona State Medical Association, a resolution was introduced and referred to the Committee on Public Welfare, asking that the influence of the Association be directed toward full time health officers in Arizona. The question frequently arises as to the advantages to be gained from a full-time health officer, who has no other professional interest aside from making living conditions healthy for his community, and preventing spread of disease. The following brief summary of some accomplishments by Dr. Ernest W. Prothro, former full-time health officer of McKinley County, N. M., and now in charge of the county unit work of Cameron County, Texas, is taken from the weekly bulletin of the New Mexico Bureau of Public Health. It speaks for itself:—

"A yearly examination of all public and parochial school children totaling 10,000 was made. 7,000 of this number were found to have one or more defects of which 1,500 we know have been corrected. An extensive school follow-up campaign was carried out.

"There are 27 cases of diptheria with three deaths. 5,000 toxin anti-toxin immunizations to school and pre-school children prevented further spread. Several cases of suspected smallpox were reported but none proved positive because of the 14,000 vaccinations done during the last two years.

"All of our larger towns have passed the United States Public Health Service Standard Milk Ordinance and much time was spent in teaching the dairymen how to produce good milk. We assisted with the tuberculosis testing of 5,050 cows and destroyed 270 found diseased. Where less than 5 per cent of the milk was anywhere close to grade "A," 80.5 per cent is now in this class. People who were served skimmed and adulterated milk, may now obtain type specified on the label. In obtaining this high grade, 164 dairies were graded, 700 inspections were made in which 900 corrections were obtained, 600 laboratory pecimens were examined in which some of the first tests ran up into the millions of bacteria to the cubic centimeter while now there are few samples that run more than from 10,000 to 50,000. This work now involves 2,611 gallons of milk daily.

PROGRAM OF THE SOUTHWESTERN MEETING
Albuquerque, November 8, 9 and 10

Below will be found the completed program of the annual meeting of the Medical & Surgical Association of the Southwest. The Program Committee has arranged a Clinical Congress, similar to the meeting held last year in El Paso, which attracted the largest gathering ever assembled at a Southwest meeting. The program is very attractive and should draw another large attendance:

PROGRAM

THURSDAY, NOVEMBER 8

MORNING SESSION, 10 A. M.

Address of Welcome:
MAYOR CLYDE TINGELY, Albuquerque, N. M.

President's Address:
DR. HUGH CROUSE, El Paso, Texas.

Early Diagnosis and Preventive Treatment of Endocrine Disorders:
DR. WILLIAM ENGELBACH, St. Louis, Mo.

Necessity for Team Work in the Treatment of Cancer:
DR. H. J. ULLMAN, Santa Barbara, Calif.

LUNCHEON RECESS

AFTERNOON SESSION, 2 P. M.

Inter-relationship of Pediatrics and Phychiatry:
DR. F. P. GEGENBACH, Denver, Colo.

The Relation of Mesenteric Adenitis to Abdominal Surgery:
DR. LEONARD FREEMAN, Denver, Colo.

Complications of Pott's Fracture:
DR. DENNIS CRILE, Chicago, Ill.

Clinical Address:
DR. VERNE C. HUNT, Mayo Clinic, Rochester, Minn.

FRIDAY, NOVEMBER 9

MORNING SESSION, 9 A. M.

Clinic:—Tuberculosis in Children:
DR. J. A. MEYERS, Minneapolis, Minn.

Psychiatric Study of Four Murderers:
DR. KARL MENNINGER, Topeka, Kans.

The Internist and the Diagnosis of General Paresis:
DR. N. H. BRUSH, Santa Barbara, Calif.

Early Diagnosis and Preventive Treatment of Endocrine Disorders:
DR. WILLIAM ENGELBACH, St. Louis, Mo.

LUNCHEON RECESS

AFTERNOON SESSION, 2 P. M.

Peptic Ulcer Complicated with Appendicitis and Cholecystitis:
DR. FRED SPEIK, Los Angeles, Calif.

Surgical Pathology of Peritonitis:
DR. J. W. KENNEDY, Philadelphia, Penna.

Clinical Address:
DR. VERNE C. HUNT, Mayo Clinic, Rochester, Minn.

Lead in the Treatment of Cancer:
DR. H. J. ULLMAN, Santa Barbara, Calif.

SATURDAY, NOVEMBER 10

MORNING SESSION, 9 A. M.

Foreign Bodies in Respiratory and Upper Digestive Tract:
DR. SIMON JESBERG, Los Angeles, Calif.

Lung Abscess:
DR. JOHN W. SHUMAN, Los Angeles, Calif.

Thoracoplasty:
DR. F. P. MILLER, Los Angeles, Calif.

Tuberculosis in Children:
DR. J. A. MEYERS, Minneapolis, Minn.

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AFTERNOON SESSION, 2 P. M.

Pulmonary Surgery:
DR. EVARTS GRAHAM, St. Louis, Mo.

Vaginal Hysterectomy and Its Indications:
DR J. W. KENNEDY, Philadelphia, Penna.

Diagnostic Clinic:
DR. JOHN W. SHUMAN, Los Angeles, Calif.

Diagnostic Clinic:—Infant Feeding and Nutritional Cases:
DR. F. P. GEGENBACH, Denver, Colo.

EL PASO COUNTY MEDICAL SOCIETY
Meeting at
WILLIAM BEAUMONT GENERAL HOSPITAL
September 17, 1928

Remarks of Welcome, Col. William H. Moncrief, M.C.

SURGICAL SUBJECTS

Arranged by Maj. Frederick S. Wright
Chief of Surgical Servvice.

1. Presentation of Gunshot Wounds (two cases)
   Maj. Walter L. Reesman, D. C.
2. Impacted Cuspids with Headache
   Maj. Charles G. Hutter, M. C.
3. a. Malignant Growth of Rectum.
   2. Viseroptosis and Chronic Cholecystitis
   Capt. Daniel C. Hutton, M. C.
4. Polycystic Kidney with Nephrolithiasis
   Lieut. William R. Craig, M. C.

MEDICAL SUBJECTS

Arranged by Maj. Michael A. Dailey
Chief of Medical Service

1. Aneurism - - Capt. Edward A. Casserly, M.C.
2. a. Aortic Regurgitation
   b. Arthritis
   c. Enlarged Spleen
   Capt. David L. Stewart, M. C.
3. Enlarged Liver and Spleen (two cases)
   Maj. Jacob C. Bowman, M. C.
4. a. Post Encephalitic Manifestations, (two cases)
   b. Neuro-syphilis, (4 cases, including Charcot Spine),
   c. Psychasthenia,
   d. Psychoses, (4 cases of Dementia Praecox and one Alcoholic Hallucinosis)
   Capt. Elgen C. Pratt, M. C.

X-ray views, where indicated in any of the above cases, were shown by Lieut. Clifford A. Gray, M. C.

EL PASO HEALTH DEPARTMENT

Deaths for Month of August, 1928

	Male	Female	Total
White	28	6	34
Mexican	43	50	93
Black	3	2	5
Total	74	58	132

Births for Month of August, 1928

	Male	Female	Total
White	35	33	58
Mexican	163	101	204
Black	2	2	4
Total	140	136	276

ST. JOSEPH'S HOSPITAL (Phoenix)

September Staff Meeting.

The Staff of St. Joseph's Hospital resumed regular meetings, after the summer vacation, on September 10th. Dr. E. Payne Palmer, chairman of the staff, called for the monthly report and summary for the months of July and August, which were read by Dr. Fournier. Dr. Palmer called attention to the inconvenience which arises when surgeons fail to keep their appointments in the surgery and thereby encroach upon the time of operations scheduled to follow. He also called attention to the necessity of improvement in the securing autopsies, if the hospital is to secure approval for interneship. He introduced Miss Hoeffner, the new Superintendent of Nurses, stating that she was for ten years in a similar position with St. Joseph's Hospital at Sioux City, Iowa.

The program chairman for the meeting was DR. FRANK MILLOY, who made the following statement:

"According to hospital authorities, we are supposed to make the material of the hospital the subject of our staff meetings; so, in preparing the program, I have selected three cases from about seven upon which autopsies were performed. All of these three cases presented rather difficult features for diagnosis. All three of them had surgical indications, but none of them were operated on; all three died and were autopsied.

I have tried to condense the histories and treatment and the physical examinations, and will read them. It is proposed that we then have the cases discussed fully, and any criticism as to the diagnosis or treatment discussed freely, and at the end of the discussion we will have a report of the autopsy.

Under each case there is a special paper prepared by members of the staff. The subject to be discussed under each paper does not mean that that was the diagnosis arrived at from the autopsy, although it looked like the most important point to be discussed.

Case No. 13835

Patient is a white male, 39 years of age. The only information obtained about past history, is that for past week patient has not felt well and complained to his wife that his teeth hurt. While at work yesterday his foreman noticed him sitting on the running board of a car with his head down. At 5 o'clock this morning his wife found him in a convulsion. About an hour later he had recovered from the convulsion but was very hazy mentally and answered questions slowly, and said that the only symptoms he had had prior to this time was aching in his teeth. His wife stated at this time that he had had to get up several times at night to urinate during the past week and this was unusual for him.

The physical findings are as follows: Pupils equal and regular, react to light and accommodation but are contracted. Heart beat is forceful. Knee jerks diminished bilaterally. Slight Babinski on right side.

Ophthalmologist's report on eyes as follows: Fundus shows some hyperemia and congestion of disc. Veins of fundus slightly distended. Findings consistent with increase of intracranial pressure though not necesarily pathognomonic.

There are no abnormal findings in blood or urine. Spinal puncture under no pressure. Cell count 2. Wassermann negative. Urea nitrogen 16 m.g. per 100 c.c. of blood. Non-protein nitrogen 38 mg. per 100 c.c. of blood.

Report of two consultants revealed no additional information execpt condition of teeth very bad.

Patient became progressively worse, having repeated convulsions which became closer together, and patient finally died in a convulsion six days after entrance to hospital.

Patient's temperature varied from normal to 101, until just before death, it rose to 105. Pulse rate ranged from 60 to 80. Respiration from 16 to 20.

Ques. Did the patient vomit? Ans. No, there was no vomiting.

Ques. What was the blood pressure? Ans. Bood pressure is not mentioned, but I am quite sure that one of the men stated there was no increase in blood pressure.

Ques. Was there any paralysis? Ans. No.

DR. WATKINS: Being what Dr. Palmer once characterized as a "damned pathologist," not supposed to know anything about general medicine, I will start the discussion in hopes that those better informed will be encouraged thereby. I recall seeing somewhere in my reading of medical literature that the triads of symptoms in brain tumor are headache, vomiting and choked disc. In the current issue of the Journal of Medical Science there is an article from Cushing's service at Peter Bent Brigham Hospital in Boston, reporting upon some 145 patients with brain tumor proven by

autopsy or operation. More than 16 per cent of the patients with brain tumor of the classes supposed to be associated with eye ground changes showed no intraocular changes at all. If we could therefore have brain tumor without one leg of this triad, we might conceivably have brain tumor without any of the classical signs. If we were to consider the recorded symptoms in this case, it is difficult to see on what the diagnosis of brain tumor rests.

DR. MILLOY: About the only symptom of brain tumor which this patient had was convulsions. It would seem to be a very rapidly progressing case of brain tumor. He was only seven days in the hospital and the only symptoms prior to that time were aching of the teeth and disturbance of urination.

DR. BROCKWAY: Where does the suggestion of brain tumor come from in connection with this case? Ans. The working diagnosis on entrance to the hospital was brain tumor.

DR. BANNISTER: I think the symptoms in this case might suggest encephalitis. The temperature did not go high at all, until just before death; the pulse was slow; the knee jerks were diminished; there was no evidence of diplopia but his pupils were contracted. It would fit in with encephalitis better than with any other intracranial condition I think of.

DR. HOLMES: This is out of my line, but it seems to me to be more like an infection of some sort than tumor. I could hardly conceive of a brain tumor taking such a rapid course, and would rather expect some sort of acute conditions.

DR. MILLOY: We will have Dr. Woodman present his summary of brain tumors, which will probably throw some light on the subject.

TUMORS OF THE BRAIN

Thomas W. Woodman, M. D.

There are several types of brain tumor—the most common of which is the glioma and these comprise about 50 per cent of all tumors of the brain. There is a marked difference of opinion regarding the order of frequency of the other tumors of the brain. Those to be considered are the sarcoma, gumma endothelioma, tuberculoma, carcinoma and fibroma.

The glioma develops from the neuroglia and from the ependyma, and, depending on the rapidity of growth, is well circumscribed or infiltrating into the brain tissue. No line of demarkation can be found either grossly or microscopically between the tumor and normal brain tissue in the rapidly growing type, but where the tumor is slow growing it is much firmer and can usually be shelled out. These tumors grow subcortically, and may be as small as a pea or may occupy half of the brain.

Sarcoma may be either primary or secondary, single or multiple. The primary forms grow from the membranes of the brain or from the bone itself and compress the brain rather than infiltrating it. Consequently they offer the best possibility of surgical relief. They may however arise in the pituitary substance, in the walls of the blood vessels, and in the sheaths of the nerves. These primary sarcomas, classified by Cushing as endotheliomas, are usually benign and readily removed. The melanosarcoma is rare and always secondary. Multiple diffuse sarcomatosis is rare and may occur as multiple small nodules scattered over the surface of the brain or as a diffuse infiltration of the membranes of the brain.

Tubercles of the brain are never primary. They usually occur in children and most commonly in the subtentorial region. They may be solitary or multiple and when located in the region of the

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crura cerebri, of the corpora quadrigemina and the pons, may cause a secondary hydrocephalus which will tend to obscure the brain tumor syndrome. They grow from the membranes and are usually found on or near the surface. They may infiltrate the brain tissue.

Gummata are rare. Those of a solitary character do occur. These are not amenable to antisyphilitic treatment and should be removed if possible. They are usually cortical, infiltrate the brain substance, and at times can be shelled out. The exudative form of cerebrospinal syphilitic meningitis is of course non-surgical and responds to antisyphilitic treatment.

Fibroma is a connective tissue tumor, with few or no cellular elements, and occurs, with predilection, in the pituitary gland and is attached to the nerve trunks which leave the pons. The acoustic nerve is especially often the seat of these growths, giving rise to tumors of the cerebellopontine angle. They are usually single but may be multiple and may occur in the form of neurofibromata, attached to various cranial nerves (Recklinghausen's disease).

Carcinomata are always secondary and may be multiple, occurring as metastases. They grow rapidly and are always fatal.

Adenomata occur in the hypophysis.

Cysts may be primary or secondary. Primary cysts are those which arise from parasites such as the echinococci. Traumatic cysts around penetrating spicules of bone are at times encountered, and may give rise to considerable destruction of brain tissue. Secondary cysts are sometimes found in connection with gliomata and at times with sarcomata. Dermoid tumors and cysts are very rare.

Angiomata are occasionally found in operations for Jacksonian epilepsy. They do not present definite pressure symptoms, and, although congenital, may not manifest cortical pressure or irritation symptoms until early adult life.

Psammomata are found only in the pineal gland and occasionally in the choroid plexus. They are usually a postmortem finding.

Lipomata, enchondromata, and chordomata are rarities.

Aneurysms are usually seen in connection with the basilar or vertebral arteries and are usually luetic in origin.

ETIOLOGY

Some tumors are caused by a specific organism such as the tubercle, gumma, and echinococci. Trauma may be a factor in the production of tubercle or gummata by bruising of brain tissue and consequently lowering the resistance of the tissue to these infections. Cysts may follow the penetration of a spicule of bone into the brain tissue.

Brain tumors are more common in males than in females and occur most frequently in the third and fourth decade of life, but no age is exempt. Tumors of the pineal gland are more commonly found in children.

SYMPTOMATOLOGY

The symptomatology of brain tumors varies in accord with the size of the tumor and the location, and somewhat as to the type of tumor. The cardinal symptoms common to practically all of the tumors are headache, increased intracranial pressure, choked discs, and projectile vomiting.

The increased intracranial pressure is greatest in tumors of rapid growth and in tumors so located as to dam up the fluid in the ventricles, thus causing an internal hydrocephalus.

The cause of the choked disc seen in brain tumors is not definitely established. Some assume that the papillo-edema is purely mechanical while

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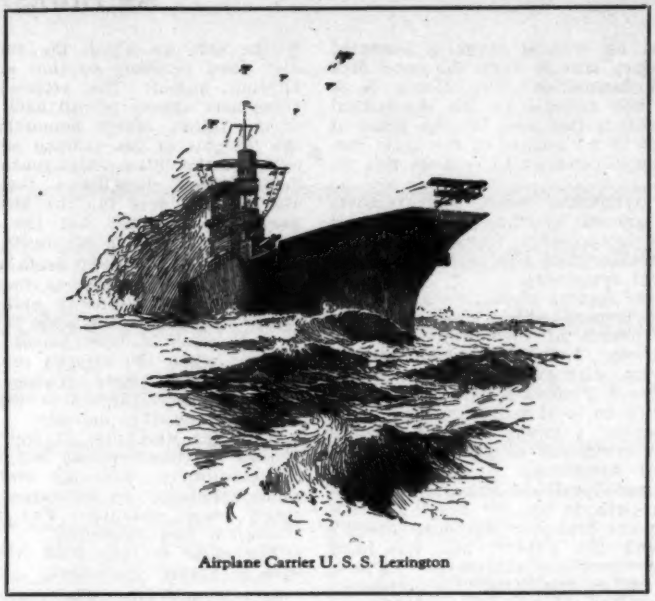

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others assume that an irritant toxin is liberated from the tumors which travels down the optic disk and produces an inflammation. This matter is of importance for if one adheres to the mechanical theory, decompression is indicated for the relief of this condition, while if we adhere to the toxic theory operation is contraindicated as regards this individual symptom.

Two groups of symptoms result from tumors: those produced by general increased pressure; and those produced by compression, irritation and destruction of the circumscribed area occupied by the tumor, namely, focal symptoms.

Cushing divides the tumors of the brain into five clinical groups: 1. Tumors which give absolutely no recognizable evidence of their existence, and are found postmortem. 2. Tumors which present focal symptoms alone, with no evidence of general increase in pressure. 3. Tumors which give general symptoms alone, with no focal manifestations, when they happen to occupy a silent area. 4. Tumors which give typical symptoms of general pressure with definite focal symptoms. 5. The symptom-complex (general and local) of tumor, which, in the absence of a growth, is brought about most often by edema from one source or another, (pseudo-brain tumors). Both the general and the focal symptoms of brain tumor are subject to two conditions; (1) element of time, and (2) gradually increased compression of the brain as a whole and a gradually increased local destruction of tissue.

The general symptoms are headache, vomiting, vertigo, choked disk, convulsions and mental symptoms, changes in pulse and respiration.

The headache of brain tumor is characterized by its severity. It is general in character, and is usually not more severe in the region of the tumor. The headaches may last for hours, even days, and are followed by more or less long periods of intermission. They are increased by anything which increases intracranial tension, heavy lifting, straining at stool, coughing, sneezing, a jar to the head or body. During the headache the pulse is usually slower than normal. There is general apathy, and mental hebetude. This is usually a late symptom due to increased intracranial pressure.

Vomiting usually occurs during an attack of headache and is projectile in type, if the intracranial pressure is very high.

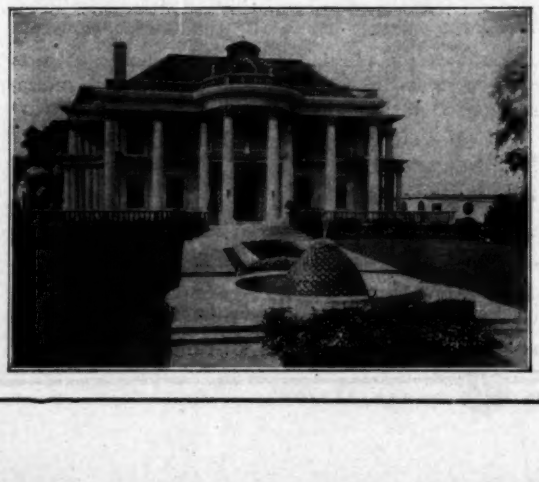
Choked disk is practically always present. In the very early stages the veins become distended and then tortuous. The papilla becomes somewhat injected and the margins, beginning usually from the nasal side, become less sharply defined. Then the arteries become less prominent on one side, usually the side on which the tumor is located. The disk then becomes swollen and projects into the vitreous humor. The arteries disappear and the veins may appear to fall back to the general level of the retina. Small hemorrhages are seen about the margins of the swollen edematous area. If no relief to the intracranial tension is given, the vascularity then diminishes, the disk becomes pale, and atrophy sets in; the swelling, however, may persist or dimnlish, but the vision gradually decreases and ends in blindness.

Convulsions seen in brain tumors are of three types; general convulsions, focal epilepsy, and cerebellar spasms. General epileptic siezures occur rather infrequently in brain tumors, but may occur at any period of development. They are of special interest when the attacks precede all of the general and focal signs. These epileptiform siezures cannot be distinguished in any way from so-called genuine idiopathic epilepsy.

With the exception of frontal lobe tumors, the change in consciousness and intelligence is usually quantitative. Although brain tumors are found quite frequently in autopises on the insane, they rarely cause insanity. The patients are usually somnolent and apathetic.

The pulse is very slow when intracranial pressure is greatly increased.

Localizing Signs: There are today known to be very few silent areas in the brain. A tumor, by pressure or infiltration, leads to a definite disturbance or a loss of function of some area of the cortex or subcortical tissue, or of the brain-stem or cerebellum. By careful analysis of the progress of this disturbance of function a tumor can be localized. In a general way, in the cerebrum, a tumor is cortical or subcortical. We may say that growths which have their origin from the membranes or calvarium and compress the cortex will first manifest irritating signs and later on will produce loss of function. The loss of function will be somewhat limited, at least in the early stages of the growth. Thus a small tumor in the motor area of the cortex will at first cause a strictly Jacksonian spasm, for instance in the facial group of muscles. The repeated occurrence of internal hydrocephalus may for a long time obscure the focal symptoms. Tumors in silent areas may produce distal symptoms and cause us to make errors in localization. For example a cerebellar tumor may cause such a pressure upon the occipital lobe that localizing occipital signs are produced. It is impossible in a short paper to go into the details of tumors in individual locations in the brain. In general definite focal symptoms are produced and



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if the anatomy and physiology of the brain is clearly understood a localization of the tumor can be made by working back from these symptoms.

The diagnosis of brain tumor is based on two factors; one is the progressive loss of function of some part of the brain; the second is the fact that the tumor, as it grows, gradually adds to the volume of the cranial contents, and therefore increases the intracranial pressure. By searching carefully into the history of these cases we can usually obtain progressive increase in these factors. Spinal puncture in these cases is unnecessary as a means of diagnosis and carries with it the danger of hemorrhage or sudden death as a result of pressure on the respiratory center.

In the differential diagnosis we must consider paresis, multiple sclerosis, abscess of the brain, internal hydrocephalus, hysteria, aneurysom and nephritis in its late stages. A tumor in the frontal lobes may run a clinical course similar to paresis. In paresis the mental symptoms are progressive dementia rather than mental hebetude. The speech disturbance is syllable stumbling with marked deterioration of memory. The focal signs are sudden in onset rather than progressive. There are no signs of increased intracranial pressure and cerebrospinal fluid shows an increased cell count, a positive Wassermann and the gold curve in the paretic zone. The Argyll Robertson pupil is usually present in paresis.

Nystagmus, scanning speech and intention tremor constitute a triad of symptoms seen only in multiple sclerosis.

Latent abscesses may be difficult to differentiate from brain tumor. The periodic headaches in latent abscesses are usually associated with general malaise, a slight rise of temperature and increased heart action. There is an increased cell count in the cerebrospinal fluid and the white blood count is increased.

Internal hydrocephalus usually presents bilateral spastic signs affecting in a very gradual manner both arms and both legs.

Hysteria can usually be ruled out and differentiated as it does not conform to the physiological laws governing the functions of the various centers and tracts of the brain, cerebellum or brain stem.

Aneurysms may occur anywhere in the cerebral circulation, but are found oftenest in the middle cerebral and basilar arteries. The Wassermann test is usually positive and a bruit is present.

Uremia may cause focal brain lesions, both hemiplegia, aphasia, localized convulsions, etc., but these are always of a passing character and disappear with the passing of the uremic intoxication. The presence of albumin and casts in the urine and the high diastolic and systolic blood-pressure, together with the fleeting character of the focal symptoms, rule out brain tumor.

X-ray is of some value in diagnosis. In a few cases the tumor itself can be seen in the film,—those cases in which there is calcareous deposit. Tumors which infiltrate sinuses can be demonstrated by the x-ray; because, displacing the air in the sinus, they will cast a shadow. Separation of the sutures of the skull and general enlargement of the skull as a whole is rather common in tumors of the posterior fossa.

Surgical operations are either radical, performed with a view of removing the tumor, or remedial, viz., decompression, when the tumor cannot be localized accurately.

Autopsy Report on Patient 13835 (Dr. Woodman): —The body is that of a well nourished adult male weighing about 175 lbs., 6 feet tall and apparently 35 years of age. Body surface presents no scars. When the calvarium was removed the dura was found to be moderately adherent and bulging throughout as though under pressure. The dura was incised, the surface of the brain was edematous, the convolutions less distinctly marked than normal. Section of the brain revealed a tumor, encapsulated, in the corpus callosum, about the size of a half dollar. The lateral ventricles were moderately dilated. Microscopically this tumor was made up of glia cells and some fibrous tissue.—Diagnosis,—glioma.

Case No. 14210

Patient is a moderately nourished male who came into the office August 2nd, complaining of dizziness and vomiting. Present spell began about three weeks ago.

Past History: Patient has always been a hard-working man and with nothing in past history except irregular recurring spells of biliousness, lasting from several days to two or three weeks, during which time, patient vomited a great deal and at times became very weak. Patient does not think he was ever jaundiced before.

Physical examination: Moderately nourished male, 64 years of age, with a marked staggering gait and in semi-stuporous condition. He is definitely jaundiced but there is no evidence of edema or ascites. Tongue coated. Teeth in bad condition. Pupils small, irregular and react sluggishly to light. Lung borders normal, no areas of dulness—no rales. Heart is inside mammary line—both sounds present, rather faint. Peripheral blood vessels are full and roll under the finger tips. Blood pressure 110-90. Abdomen is soft and flabby, but

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WATFORD, HERTS, ENGLAND

patient complains of considerable tenderness in right upper quadrant. Liver is not palpable, and no definite tumor masses can be elicited.

Patient refused to enter hospital, so was examined at the laboratory on August 3rd and 4th. The following are the laboratory findings:

The Wassermann reactions were strongly positive. Kahn test positive. Kolmer titration shows this to be 10 plus positive. Iteric index 20, next dey 100.

Red blood cells 4,600.000; white blood cells 8,200; hemoglobin 90%; mononuclears 26%; polynuclears 74%.

X-ray examination of this patient's gall bladder with dye showed no shadow at any time during the thirty-six hour period. Patient, however, did not retain all of the dye, vomiting shortly after the last capsule. It is very likely that the dye had not left the stomach as our stomach examination shows rather marked delay in emptying.

Examination with barium meal shows normal contour of the stomach. There is a deformity of the duodenum resembling diverticulum from the inner side of the duodenum. This shadow is not constant, and did not show on a second examination. At six hours the stomach had emptied practically none of the barium meal and there was a distinct residue at twenty-four hours. There is evidently obstruction beyond the first portion of the duodenum; at twenty-four hours the colon was outlined irregularly with some suggestion of filling defect around the first portion of the transverse colon.

We believe the evidence is quite plain for some serious lesion in the upper right quadrant.

On the morning of the 5th, patient was considerably more comatose and was sent to hospital in an ambulance. Upon entrance, patient's temperature was 97, pulse 76, respiration 20. Odor of breath was foul but not an acetone odor.

Unable to retain any fluids by mouth, so proctoclysis and hypodermoclysis were started. Unable to urinate and 500 c.c of urine was withdrawn by catheter. Patient perspired freely after administration of fluids. His general condition did not seem to change very much during the four days observation except that he seemed to be gradually sinking into coma. At 9:45 P. M. he became dyspneic and cyanotic and died very suddenly at 10 o'clock.

Ques. What was his temperature? Temperature on entrance was 97; he was in the hospital only one day; he entered in the morning and died in the evening of the same day, and had no fever at any time.

Q. What did urine show? It was not examined.

Q. What was pulse rate? It was 76 to 80 and apparently regular.

Q. How long was he jaundiced? He seemed to have a progressive jaundice, which was more marked toward the last.

Q. What was his occupation? Rancher, living on the desert.

Q. Could he have obtained some drug or poison? There is nothing to indicate it. He had been sick about three weeks, complaining of dizziness and vomiting. On examination there was some pain in epigastrium, though he had not complained of pain. He had spells of biliousness, each spell being accompanied by vomiting and dizziness, but this had occurred over a period of years.

Q. Was there any clue as to how long he had had syphilis? No.

CAUSES OF JAUNDICE

Dr. Kimball Bannister

By jaundice we mean a yellow discoloration of the tissues of the body, evidenced by discoloration of the skin and sclera due to the presence of bile pigment and bilirubin in the blood stream. The only source of bilirubin is in the hemoglobin of the blood; it is manufactured by the spleen and possibly by the cells of the liver itself, although some believe that the liver is simply an excretory organ for the bile. It follows, therefore, that jaundice may be caused by an obstruction to the outflow of the bile, which would give us our first classification, or obstructive jaundice. Or, it might be caused by destruction of the liver tissue itself, resulting in malfunction, which would permit the dissemination of bile pigment through the debilitated liver cells into the blood stream; this would give us the second classification, or toxic jaundice. Or, by destruction of the blood elements themselves in the blood stream, in which case it would be hemolytic jaundice.

Obstruction is caused sometimes by stones in the bile duct or common duct; it is also caused by tumors pressing upon the duct; by enlarged glands; or it is conceivable that inflammation of the duct itself might result in a plug of mucus; stricture of the duct by scar formation, either from disease or operative mistakes, may cause jaundice; traction on the duct by scars may cause it; floating kidney will occasionally cause an obstructive jaundice; cancer of the liver may cause pressure, and result in obstructive jaundice; congestion due to chronic heart failure; and lastly, cirrhosis of the liver.

The cardinal symptoms of obstructive jaundice are: (1) clay-colored stools, there being an absence of bile pigments in the feces; (2) itching; (3) pain; (4) bile pigment present in the urine and in the blood but not in the feces; (5) it gives what is known as a direct Van den Bergh test. I am not very familiar with this test, but do know that it is used to distinguish the types of jaundice, and that a direct reaction is indicative of obstructive jaundice.

The differential points in the types of jaundice

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"Dr. Sutton is one of the most indefatigable of American dermatologists; a treatise on dermatology naturally comes as a sequence of his labors. He has been an independent investigator, but his work has been constructive and not iconoclastic. As would be expected, therefore, his treatise, while showing his independence of view, is along conservatve lines, and is free from the unpardonable sin in a textbook of being controversial. This work is well done and it is highly recommended for study to the practitioner who would obtain a grasp of the subject of dermatology as a whole, as distinguished from a smattering knowledge of a few dermotoses."

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are not very well defined. If accompanied by pain, we usually think of stones, and yet we know that a stone may give no pain; it may be due to lues, which may be accompanied by pain; and floating kidney, when it obstructs the duct, may give rise to pain. If the jaundice is painless, due to extra ductal pressure, the cause is usually cancer, and we usually find an enlarged gall bladder, and, as a rule, the intense itching comes on earlier than in other types. It may be due to pressure from enlarged glands, or aneurysm of the aorta, or to cirrhosis, or it may be due to the passive type of obstruction, and this we can usually determine by the condition of the heart and the history.

The second classification of infectious and hepatic jaundice in which there is no mechanical obstruction shows no bile present in the urine and in the feces. There are a number of different causes. The only specific infectious jaundice is what is known as Weil's disease. Then there is what is known as catarrhal jaundice, which we sometimes see in children, and in a severer form in adults. We also find an infectious jaundice in malaria which is diagnosed by the blood findings, and by blood culture in typhoid, pneumonia, etc. Then there is a postoperative type, seen most frequently in old people, following operations on the gall bladder; this is usually fatal.

The toxic forms are seen most frequently in the treatment of lues, due to arsenical poisoning. There is another form which we seldom hear of in this country, but which is written about considerably in foreign journals, due to chloroform or phosphorus.

The cardinal symptom is the presence of bile in the feces and in the urine.

The third classification is that of hemolytic jaundice, which may be familial, acquired or congenital. The acquired and familial jaundice have several factors in common; it is a chronic jaundice, with the bile pigment present in the blood stream, but not in the urine; there are no obstructive features, no slowing of the pulse, no bile salts in the blood, no itching. Anemia is common to both types, but is much more marked in the acquired form, and pernicious anemia may be classified under this form. There is an enlarged and firm spleen in all cases, and splenectomy is usually required.

Under the acquired type we may classify that due to pernicious anemia and that due to the tapeworm infection.

In general, in differentiation of the three types, in obstructive hepatic jaundice, bilirubin and urobilin are both present in the blood stream and in the urine, but not in the feces. The Van den Bergh test gives a direct positive. In infectious and toxic jaundice bile is present in the feces and urine, and in the hemolytic jaundice there is no pigment in the urine, no itching, and the indirect Van den Bergh test is positive.

All types of jaundice must be differentiated very carefully from the discoloration of the skin caused by the eating of carrots and other vegetables which have a yellow pigment; the differentiation is important in that it does not stain the sclera, and is most pronounced on the palms of the hands and soles of the feet.

Prognosis: The hemolytic types, barring those due to anemia and extreme toxic conditions, are usually curable by splenectomy. The toxic and infectious types depend largely upon the severity of the infection which causes the jaundice. Where the jaundice is due to gall stones, it is usually a poor operative risk.

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sive days; and the administration of glucose and saline has greatly increased the resisting power of the patient and protects against the infectious type of jaundice which follows operative procedure.

DR. MILLOY:—I intended to ask Mr. Boynton to be present and discuss the Van den Bergh test, but forgot to do it. The icteric index, which is a comparison of the color of the blood serum to a scale, gives a normal range of from 4 to 6. In a color intensity of from 6 to 15, the patient will show no visible jaundice; a reading around 15 is of importance because it means that there is excessive bile in the blood. Above 15 the patient will be visibly jaundiced.

The Van den Bergh test, which is more delicate, is a quantitative test of the bilirubin in the blood; if I remember correctly, the normal amount is 1.5 mgm. per 100 c. c. The difference between the direct and indirect reactions is merely in addition of one of the reagents; it shows an immediate color change in the direct, and this change is delayed 10 or 15 minutes in the indirect. It is supposed to be indicative of obstructive jaundice when the reaction is direct. It does not always work out.

Dr. Watkins will present the autopsy report.

DR. WATKINS:—Before presenting the autopsy report, I would like to make a little more clear the differences between the direct and indirect Van den Bergh reactions. The test is intended to aid in differentiating between obstructive and hemolytic jaundice. The essential point is that the bilirubin in the blood before it has passed through the liver cells and bilirubin which has been excreted as bile and then reabsorbed into the blood stream, give different reactions. The direct reaction, which occurs immediately, is given by the bilirubin of the excreted bile, and is supposed to indicate that the obstruction is distal to the excreting liver cells. The indirect reaction is given by the bilirubin before it has been acted on by the liver cells, and is found in conditions where liver cells are destroyed or diseased, causing accumulation of bile in the blood serum. There is a practical difficulty in doing this test in very warm climates, as the color comparisons are made in ethereal solutions, and ether boils at 80 degrees.

Had we realized that this case would be discussed before the staff, we would have removed the diseased organs for demonstration. Even at autopsy it is not always possible to say what the patient died of. This patient had normal lungs and normal heart. There were a few areas of fibrosis in the aorta, which we looked for when told of the positive Wassermann. The findings in the abdomen were interesting. There was a diffuse, old peritonitis, with fairly general adhesions. The liver was adherent over its entire surface; spleen was adherent with some calcific areas in its capsule. There were dense adhesions about the gall bladder and duodenum. Stomach was normal. There was a cicatricial contraction of the second portion of the duodenum with a diverticulum-like pouch. Gallbladder was small and white with constriction in the common duct. Liver was not grossly enlarged, but was knobby in appearance and paler than normal. Kidneys were not grossly diseased. There was no tumor of the pancreas, this organ appearing to be normal. Sections from kidney showed interstitial nephritis. Sections of liver showed chronic inflammatory involvement, with cloudy swelling of

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the liver cells and evidences of an acute inflammation. There were some giant cells.

Cause of death could be set down as toxic jaundice with cholemia, caused by acute hepatitis. Contributing causes were chronic hepatitis, with partial obstruction in common duct; chronic cholecystitis.

DR. MILLOY:—This man had been sick for two weeks, vomiting every day. Toward the last he could retain no fluid whatever and this condition together with the intense heat of the desert may have something to do with the rapidly fatal ending. He was completely dehydrated.

DR. MILLS:—The giant cells were more like the giant cells of repair than those found in syphilis.

DR. PALMER:—This is a condition that we occasionally see as a result of chronic obstructive jaundice, and we do not operate early enough. Then, when we do operate, there is not enough liver left to function and the patient goes on to slow death. Unless we do an autopsy to discover the destruction of liver cells, we do not know what they died of.

III—Case No. 13840

Patient is a moderately nourished male, about 60 years of age. Has worked in mines practically all of his life. Has never had any illnesses or chronic trouble of any kind during his entire life.

Present Complaint: Difficulty in swallowing which began three or four weeks ago. No pain whatever.

Physical Examination: Well developed male. Teeth artificial.

Chest: Well developed. No dulness. No rales.

Heart: Not enlarged—both sounds present and equal. Blood pressure 120-100.

Abdomen: Rather distended but no areas of tenderness or masses elicited. Knee jerks are present and quite brisk. Attempts to pass stomach pump, resulted each time in an obstruction to its passage into the stomach at about the cardiac orifice.

The following are the laboratory findings:

Wassermann reactions were negative.

No. 645889—X-ray Examniation May 28. The examination of this patient's esophagus under the fluoroscope showed contraction of the lower portion. and this contraction is evidently spasm as it could be seen to distend and then contract. The area of contractions is about two inches long just above the stomach.

The stomach was distended with gas and is not clearly outlined because of insufficient barium having entered it.

Chest films show extensive old irregular fibrous densities around the hilum of each side.

No. 56811—June 6th (Ewald)—A Microscopic examination negative. No free acid; total acidity 32. Blood test positive by Weber.

No. 56934—Blood: The Wassermann reactions were negative. Icteric index 4. Red blood cells 2,910,000. White blood cells 10,000; hemoglobin 65%; polynuclears 72%; mononuclears 28%.

No. 49006: June 5th: In the examination of this patient's esophagus and stomach we show less spasm of the cardia than was shown at the previous examination. The drink entered the stomach more readily. The second meal entered more readily than the first one.

The barium leaves the stomach very rapidly and reaches the splenic flexure at six hours. The stomach is transverse in shape with an hour glass contraction. Cardia is much distended with gas, the antrum and pylorus being contracted and hypermotic.

We were unable to demonstrate definite organic disease of the stomach.

After first examination cardio spasm dilator was used, after which patient thought he could swallow considerably better. A few days before entering hospital patient began to have marked gaseous distention of abdomen. There was no evidence of any fluid present. The distention became so intense that patient's abdomen resembled a paralytic ileus. There was no vomiting at any time.

Patient entered the hospital on the 11th in intense pain and died in less than twenty-four hours.

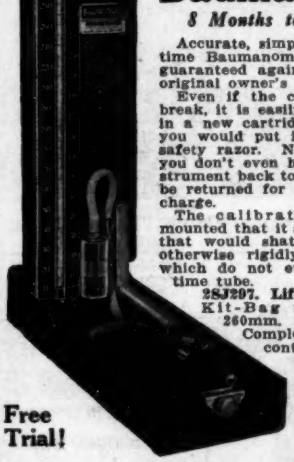
DR. MILLOY:—Dr. Hamer will present a discussion of the symptoms of cancer of the stomach.

EARLY SYMPTOMS OF CARCINOMA OF STOMACH

Dr. J. D. Hamer

Malignant lesions, of cardia and fundus frequently offer difficulties in diagnosis. This is especially true of early cases, before onset of anemia, cachexia, and marked loss of weight. Those three symptoms are those given so much prominence in text books, and those offered to the medical student as his only guide to diagnosis of gastric cancer, in the presence of gastric disturbances. The average case seen in a hospital is beyond operative intervention, possibly through a delay in diagnosis. Why? Because there is often a latent period in the development, which gives no signs or symptoms. The patient either does not visit a doctor, or the doctor has no data upon which to base an opinion. This period may last from four to eight months. Then, too, physicians must be educated to a knowledge of early cancer, and not late cancer.

The symptoms of cancer of lower esophagus, of cardia, or of fundus, are not in each case a clear cut entity, varying with situation of lesion, but are very similar in all three situations. Nor are the symptoms distinct from such conditions as cadiospasm, spasm of esophagus, or cancer of other parts of the stomach. The symptoms of carcinoma of fundus are often referred to the esophagus, while symptoms of cancer of cardia are generally gastric in nature. Frequently cancer of fundus gives rise to symptoms which point to esophagus as the of-



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fending organ, and the associated spasm of some portion of its terminal end leads to a diagnosis of cardiospasm or spasm of esophagus. On the other hand, symptoms may suggest a gastric origin and x-ray examination reveal irregularity of duodenal cap which may be only an expression of the irritability of stomach. One must always bear in mind the possibility of gastric cancer in the presence of esophageal symptoms which may be the earliest symptoms.

Albee states that in almost every case of stomach cancer, there is a latent period of several months duration, and the stage at which the patient becomes aware of disturbance may be considered the second stage. Especially is this true of cancer of fundus, corpus and lesser curvature. Friedenwald divides symptoms into two groups. First, the onset symptoms, which are sudden in a large proportion of cases, and gradual in a smaller number. In a series of 1000 cases, the onset was sudden in 77 per cent, and only 23 per cent gave history of previous disturbance. Deaver describes two clinical types; one with history of long duration, with ulcer symptoms gradually changing to cancer; the other group, in which the onset is insidious, with vague symptoms of indigestion and distress.

The symptoms of which the patients usually become aware first, are inconstant, indefinite and transitory; occasionally they are permanent. Anorexia is fairly constant (85 per cent), and dislike for certain foods, especially meats; with it there may be a fetid, bad, pasty taste, and insalivation. Dull pain is occasionally present, generally in the form of a heaviness, distention and discomfort; sometimes it radiates to the back and shoulders; it occurs often independently of meals and varies in the same patient. In cancer of the cardia pain may be felt to the right of epigastrium, behind the sternum or in the back. comes on shortly after or even during meals and is persistent. It differs from pain in cancer of the esophagus in that it does not occur during passage of food. Severe pain generally indicates widespread growth and adhesions. Gas eructation is fairly constant in cancer of the cardia, with bitter taste in the mouth, and regurgitation of small quantities of food. Vomiting is a constant symptom only in cancer of pyloric region and is usually a late symptom of the retention type with stasis. Vomitus may be slimy, mucoid, blood streaked or simply food, partially digested, fermented or putrefactive. Hematemesis, when it occurs, is usually small and persistent; massive hemorrhage is generally a late occurrence; oozing gives coffee-ground formation or there may be melena from passage of blood into bowel; the tendency of hemorrhage to persist in spite of treatment is of importance in diagnosis. Dysphagia is caused by obstruction of the growth to passage, whether situated at the cardia or whether it has spread to the esophagus from hte fundus. or to spasm which may be present before the growth is large enough to cause obstruction; dysphagia in a patient past forty years of age is a symptom of grave importance. A slowly developing dysphagia, getting progressively worse, with remissions only at first, if at all, should arouse suspicion. The dysphagia may be brought on, at first, only by swallowing a large, hard bolus. Loss of appetite. gas eructations, pain and dysphagia are the only frequent and early symptoms. Only the last is suggestive of esophagus, cardia or fundus.

DR. MILLOY:—The main features of this case were the difficulty in swallowing, the absence of pain and, suddenly two or three days before death, distention of the stomach; the abdomen became like a drum, altho there was no evidence of fluid.

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Ques. How long before the distention was the dilator used? About a week.

Ques. Was the mass viewed with the esophagoscope? There was no mass. X-ray examination showed an apparent constriction of the cardia which later disappeared, so that it was apparently cardiospasm.

DR. C. A. DONALDSON:—The rapid emptying of the stomach ought to direct more attention to the pylorus. The normal pylorus does not permit rapid, continuous emptying of the stomach and very frequently a beginning cancer shows, as its only evidence, the fact that the pylorus is not functioning. This report does not say whether the emptying was continuous or not. Furthermore cardiospasm is frequently due to cancer of the stomach, so that dilatation should be used cautiously.

DR. MILLOY:—No one has offered an explanation for the acute distention of the stomach or the absence of vomiting. We will have the autopsy report.

DR. WATKINS:—I am glad that Dr. Donaldson has favored us with this brief discussion on the x-ray findings. Dr. Donaldson has settled quietly among us and perhaps few of you know that he has been for a decade or more one of the leading roentgenologists of the country. He was formerly located in Minneapolis, but about two years ago was forced to give up his specialty; he has entered into general practice on the south side. Any comments by Dr. Donaldson on x-ray findings are accorded the utmost respect by me. The findings mentioned by him should have warned us that we had tioned by him should have warned us that we had a malignant stomach; that they did not so warn us is one of the reasons I do not like to talk about this autopsy.

The patient had a large carcinoma of the stomach involving the fundus and extending upon the lesser curvature. The esophagus and cardia were not involved, the esophagus being perfectly smooth and the visible lesion beginning about an inch from the cardiac orifice. So far as the esophageal constriction is concerned, it was purely spasm. The infiltration extended into the porpus of the stomach very much like a linitis type of lesion. There was no pyloric lesion and no explanation for the stomach distention. There were localized areas of necrosis involving the small bowel with ulceration of the mucosa in these areas; these were due to thrombosis in the mesenteric vessels.

A general discussion relative to the possibility of securing more autopsies in the hospital was called for. The hospital announced that they were preparing a room for autopsies in the hospital and hoped to have the support of the doctors in bringing their record up to the American Medical Association requirements of thirty-five per cent, in order to qualify for recognition as entitled to internes.

Adjournment at 10 p. m.

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